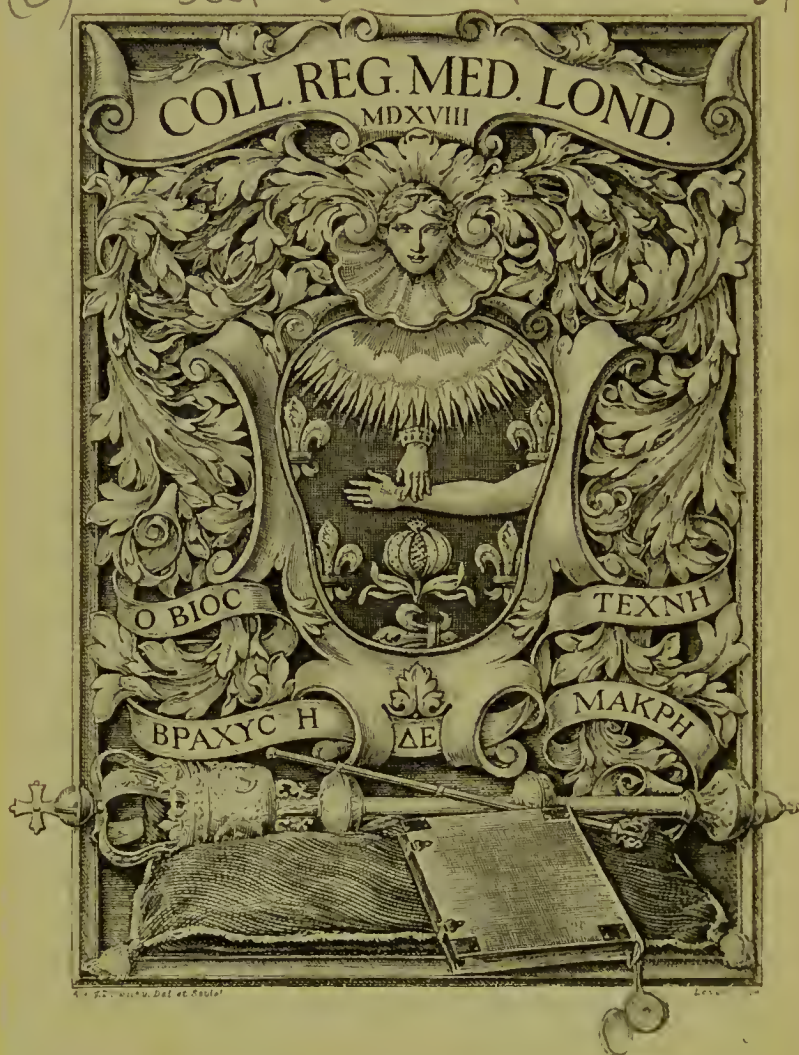


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THE RELATIVE
INFLUENCE OF THE SEXES
CONSIDERED,

In Reference to Propagation,

AS WELL IN
MAN AS IN THE LOWER RANKS OF ANIMALS.

BY JOHN WRIGHT,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN LONDON.

Desine quapropter, novitate exterritus ipsâ,
Exspuere ex animo rationem; sed magis acri
Judicio perpende: et, si tibi vera videntur,
Dede manus; aut, si falsum est, adcingere contra.

LUCRETIVS.

LONDON:
PRINTED FOR THE AUTHOR.

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PREFACE.

AN undertaking which shall have, for its object, a furtherance of the interests of society, needs not an apology for its introduction. Such is the character, and such the pretensions, of the little work which I now submit to the consideration of those who may be seeking instruction on the several questions that come within its range. By education, no less than by native bias, was I led, many years ago, to inquire into the diversities of constitution, and the extent to which they are influenced, by variableness of circumstances, in connection with generative intercourse. Modern physiology, though abounding with every conceivable theory, on the subject of generation, in the abstract, was found almost silent in its application to my purpose. Nor could I largely avail myself of the doctrines propounded in the ancient schools of philosophy. Valuable apothegms presented themselves; but, as a system, I could discover nothing that would bear the test of rigid investigation. Even the authority of Epicurus, which, in many respects, is greatly to be relied on, proved

to me a most formidable stumbling-block, on a point of vital importance, until reconciled with the construction which experience, at length, enabled me to provide. After toiling long and fruitlessly, in retirement, I resolved to depend mainly on the opportunities which medical practice should afford, for noting the peculiarities of individual temperament,—the mode and degree in which such peculiarities influence the sexes towards each other,—and the effects produced upon the moral and physical condition of their offspring. At the same time, I undertook a series of experiments, in the breeding of cattle, pigs, fowls, and rabbits, with a view to learn how close an analogy subsists, between man and other animals, in the immediate, and ultimate, tendencies of the reproductive passion. This part of my engagement, I need hardly remark, had a special reference to the improvement of whatever breeds I should adopt: and, perhaps, I cannot confer a greater service on those who may, hereafter, be disposed to emulate the task, than by presenting them with a cursory outline of my procedure. The result will be seen to justify a remark addressed to me awhile ago, by a very great and good man,* that if a gentleman, turning his attention to farming

* The Right Honourable Earl Spencer.

late in life, attempt such an enterprise, it might be considered next to a miracle, if he did not fail.

In the first instance, I deputed a jobber to provide me with a few *well-bred calves*. A pleasing exercise, I thought it would afford, to watch their growth; and shortly I had an opportunity of gratifying my desire. The man of business invited my attention to some, recently weaned, which had been brought from the hilly districts of Derbyshire, and which he declared he could strongly recommend for hardiness. The prevailing colour (light blue, with black eyes and muzzles), uninitiated as I was, appeared of very doubtful propriety; yet I could not withstand the repeated assurance that it constituted *the proudest feature in the breed*. He wished particularly to sell them to me, because he knew whence they came, *how they were bred*, and he could, moreover, at any time, buy them of me again. So I gave him £4. 10s. each for starvelings—any one of which I could have conveniently carried home. They would have been £5 each, he said, *to any body else*. This was at the commencement of winter; and having folded them in a spacious yard, behind my house, until the following spring, at a considerable expense, in the purchase of hay, turnips, and bran, without witnessing a corresponding improvement in the carcass, I sold them, each,

for a few shillings less than they had originally cost me. Nothing deterred by this unexpected discomfiture, I applied myself still to the work, but with a determination, henceforth, to entertain none that should present the colour of the first lot. I was soon informed that a milkman, named Priestley, had a good red and white cow-calf, out of a favourite beast, for which *he wanted a kind master*. It was what, in the midland counties, is often designated a "spawny calf"—a more exact definition of which will be found in a subsequent part of this little work. But I may here observe that it was of uncommon length, and "up-standing" too, as the jobbers say, and *only required to be proportionably thickened*, to make it represent a full grown beast. Indeed my wife, unaccustomed as she was, at that time, to regard animal organization, in reference to function, could not help exclaiming, when first shown it, that this was the chief, and, in her judgment, by no means an *unimportant desideratum*. Milk was purchased for its use, until a cow in full profit could be obtained; and, that the provision, thus made, might not be extravagantly appropriated, another calf, exceeding in length even that which already graced my establishment, was bought in. "Lizard" was the name employed to distinguish it from the former; and, as it happened to combine,

with other advantages, the attributes of the ruder sex, I contemplated, at no very distant period, a still closer affinity between the pair. An act of insubordinacy, however, on the part of "Lizard," presently led to an abandonment of the design: for, conceiving, one day, a wish to do violence to the persons of myself and one of my children that was standing near me, he proceeded, forthwith, to the execution of his purpose—the consequence of which was a speedy disinheritance of the privileges of his sex. Eventually these animals were disposed of, as unworthy of the generous fare they had received.

I now began to discover my ignorance in the elementary duties attached to my province. I knew not the distinction between a good, and a bad, animal, and might well, therefore, be unfortunate in my choice. To supply this defect, I matriculated in the best practical school; and, for many years, endured the opprobrium of an association with dealers, and others of like character, who swell our cattle markets with their presence. Scarcely a fair, or public sale, of interest, occurred within twenty miles of home, at which I was not to be seen; at the same time that my private operations were being conducted, to as great an extent as was compatible with my means.

Beyond attaining to a knowledge of the indivi-

dual and relative merit of the several classes of animals to which my observation was directed, an attendanec, on the occasions just referred to, did not enable me to proceed. I had still to explore the way to improvement; and very naturally turned to such works as professed to entertain the subject. From them, however, I could reap little instruction. They appeared, for the most part, to have been written by practical farmers, who lacked both the literature and science required to impart efficiency to their teaching. Some authors I met with, who had confined themselves to a rambling dissertation on the merits of their own herd: others, venturing on higher ground, had contended, with singular obliquity of judgment, that the varieties which they had been pleased, respectively, to adopt, were susceptible of higher cultivation than the rest. Few had dared to grapple with general principles—to argue that, *cæteris paribus*, all equally admit of improvement, and that, therefore, we have only to consult the soil and climate of whatever locality we inhabit, with a view to determine the size we shall adhere to, to succeed, by the application of general rules, in perfecting the carease. Mr. Cline attempted to accomplish thus much: but he proved nothing; and the extravagant character of some of his aphorisms, has tended to impair the credit due to his

performance in the main. It is a humiliating fact, that notwithstanding the wealth, talent, learning, and extreme facilities enjoyed by the agricultural interest, for the performance of such a task, there is not, at the moment I am writing, a work in the English language, embodying the principles of breeding, in accordance with the present advanced state of science. My inability to profit from sources of this kind, suggested the alternative of a personal intercourse with experienced breeders. The only objection that applied to the scheme, consisted in the interruption my further absence might occasion to the advancement of professional interests. But this consideration lost much of its weight, from a recollection of the fact, that, at no period, had what, in modern parlance, we term a *discriminating public*, imposed on me an excessive amount of duty; and it was now but too evident that they never would: soon, therefore, I journeyed far and often, in the prosecution of my plan. And not unfrequently did it happen that the privations I endured on such expeditions, were of a character to have discouraged any one less passionately attached to the pursuit. Not to trespass wantonly on the indulgence of my readers, I will adduce one or two instances. In the month of March, 1835, I determined to investigate the claims of the Devonshire

eattle to the flattering representation given of them, in the Treatise, published under the superintendence of the Society for the Diffusion of Useful Knowledge; and having business to transact in London, which could very shortly be disposed of, I proceeded by that route. The first day was consumed in reaching the Metropolis,—the next in passing thence to Exeter, where I arrived late at night, after travelling, in two days, on the outside of coaches, a distance of two hundred and ninety-seven miles, in unmitigated pain, arising from obscure abdominal disturbance, of long standing, and counter-irritation, established for its cure. The judges were, at that time, on their circuits, and I could obtain no accommodation at either of the large inns in the town. A fellow, after the class of those to be found often in the neighbourhood of such establishments, tendered his services to conduct me to an abode. Five minutes' stay, however, within its walls, served to convince me that both my person and property would be endangered by remaining; and, in angry mood, I rushed, unceremoniously, into the street, in search of a more hospitable roof. Whilst treading hastily along, and observing the previous bustle and anxiety of the day merge into the growing stillness of night, I was deploring the infatuation that had brought me thither, when, on a sudden, my reverie was interrupted by the separation of two elderly

men, at the door of one of the parties. I mentioned my condition to the resident of the house, who, happening to be an innkeeper on a limited scale, was glad enough to entertain me. On the following morning I proceeded by coach to Barnstaple, in time for a quarterly cattle market, to be held there the next day. The business of the market having been concluded, I rode a pony over ten or twelve miles of bad road, to the house of Mr. Davy, of North Molton (a man of pleasing frankness and intelligence), with whom I passed an evening in profitable conversation. Another day was spent in the inspection of Mr. Davy's beautiful herd of North Devon cattle, and in visiting Mr. Tapp, of Twitching, and the Messrs. Quartley, of Molland, for the same purpose. At night I reposed at South Molton, intending to proceed by the mail, that should pass through, the next morning, on its way from Barnstaple to Bristol, in my return home. I rose by 6, a. m., and the mail not being expected till 9 o'clock, I slung my carpet-bag, weighing, with its contents, and an upper coat, for which I had now little occasion, 17 lbs., across my shoulder, and walked leisurely on to North Molton, for the sake of contemplating, from a hill in its immediate vicinity, a spot renowned for the excellence of its cattle, and one too, where I had recently experienced

the greatest possible kindness. After feasting my soul awhile in meditation, I wandered along a circuitous path, that led me into the Bristol road; and now I discovered that a walk of four or five miles had served to advance me about one and a half, on my way home. Presently the mail came up, and lo! it was full. I had, therefore, the option to return to South Molton, where I must have remained unoccupied till the following day, or journey in a direction that should afford me no refreshment within the next fourteen miles. Not liking to retrograde, I pursued my way, and, by noon, found myself comfortably seated at the Reindeer, near Bampton—having completed about eighteen miles, under the grievous burden already mentioned, without food. Ten or twelve miles, if my memory serve me aright, yet lay betwixt me and Wiveliscomb, whither I was anxious to arrive that day. Before doing so, I grew very tired; when observing a man of professional exterior approach, who was riding in the same direction, I begged that he would, for a few minutes, relieve me of my load. Thinking, probably, that so great an act of condescension would ill accord with the dignity of his station, he refused; and I, feeling invigorated by the repulse, experienced little subsequent fatigue. Having reached Wiveliscomb, I

passed the night there ; and, hastening on to Bristol the next day, arrived in time for the mail to convey me thence to Birmingham, by night ; and at noon, on the eighth day, I was with my family, after travelling six hundred miles (five hundred on the outside of coaches), and that, too, under the pressure of unceasing pain.

When, in pursuit of this recreative study, I have been able to command sufficient time and strength, my excursions have generally been performed on foot, as conducive alike to meditation, and an economical expenditure of money. And not uncommonly has a similar disappointment to that which I encountered at Exeter, befallen me at the close of a long day's journey. At four o'clock one morning, in the latter part of September, 1835, I set out for Chesterfield, where the Derbyshire Annual Agricultural Meeting was about to be held, intending to proceed thence to Wiscton, for the purpose of enriching my stock of information, if possible, with some facts, derived from a survey of Earl Spencer's short-horns. By 11, a. m., I had accomplished the first part of my undertaking ; and after spending two hours in the show-yard, I resumed my walk in the direction of Worksop. In the village of Staveley, I had the good fortune to come up with

a gentleman, who was driving thither, and who generously invited me to accompany him. I now thought there was a prospect of reaching Barnby Moor that night, and immediately, on leaving my friend, proceeded along the road he had described, through Bilby, and arrived where I anticipated the comfort of repose, before 7 o'clock. Whether the honour conferred on the posting establishment in Barnby, by her Majesty (then Princess Victoria) having been graciously pleased to sleep there, on her way to Doncaster, shortly before, had rendered its inmates insensible to the necessities of so mean a subject as myself, or whether it was the custom of the house to refuse an entertainment to pedestrians, I know not. But this I know—it was denied to me; and, at the instance of those with whom my interview was conducted, I subsequently applied to another establishment in the same place, where, for my consolation, I was assured that they lodged none but coachmen and guards. This negative, like the former, was accompanied with a *friendly intimation* that I should most likely be able to find an asylum elsewhere—that is to say, if I would incur the trouble of walking to Sutton. The proposition was, in some measure, acceptable to me, since that village lay a mile nearer the estate I was about to visit. Still I could hardly forbear to re-

proach myself for having risked so much bodily fatigue and mental torture, without the least probability of realizing either an immediate or prospective advantage. Already had I walked nearly forty miles, to say nothing of two hours' exercise in Chesterfield; and had partaken of no food since my breakfast at Mansfield, excepting some bread and cheese, the best fare the good landlady, at whose house I rested awhile, in Staveley, could provide: and I was both hungry and tired. While musing on the horrors of impending starvation, the village I was in quest of appeared in sight; and thinking it advisable, without regard to the occupation of its inhabitants, to make my case known, wherever there should seem to be indications of comfort, I did so. One had not a spare bed,—another had, but it had been so long out of use, that my safety would unquestionably be endangered by sleeping in it. Others declared *that* to be a cross-country road, in which men of honourable pursuits were never benighted, and affected to regard my application as a marvellous piece of daring. Prudence forbade me to tell them that I had money, wherewith to discharge every obligation, lest I should share the fate of a late resident of that village, who had been murdered for the sake of a few pounds he had with him. At length I

entered a public house, at the farthest extremity of the place, and was making my best appeal to the feelings of its inmates, when a good-natured man, who listened attentively to my story, observed that, if I would wait till he should have emptied his cup, he would engage to procure me a lodging at Lound, another mile yet on the road to Wiseton. With a promise of a few more "cups" when he should have accomplished his purpose, we started off together; and soon he introduced me to a matronly lady, who, after surveying me with an air of singular curiosity, avowed her willingness to serve me in the best way she could. Having administered to the demands of hunger, she conducted me up a crazy staircase, into a three-bedded room, appropriated, ordinarily, to the use of two grown up sons, and an elderly man who lodged with them. To have demurred would have been ungrateful, since any accommodation within doors, was preferable to the fields or highway; but never shall I forget the inconvenience to which I was subjected. The bed set apart to my service was so unaccountably short, that, though commanding no greater altitude than five feet nine inches, I could not stretch myself out at full length, even when observing some degree of obliquity. In this state I lay, unable to sleep, and afraid to request that the

old man, whose stockings emitted a most noisome stench, would be pleased, for my sake, to draw them on his legs again, till the light of approaching morn should invite me to a purer air. Shortly before 6 a.m. I arose, and walked to Wiscton Hall, where I had the good fortune to meet his lordship's bailiff, commencing the routine of his daily labour. After inspecting, with as much minuteness as time and opportunity would allow, what, perhaps, might justly be deemed an unrivalled herd of cattle, I returned to Lound, at a somewhat unseasonable hour, for breakfast: then walking to Worksop, in time for a coach that should pass through that town, on its way to Nottingham, I got home in the evening of the same day.

From the preceding detail, may be formed an imperfect idea of the labour I have sustained, in the investigation of this subject. A very natural inquiry arising out of such consideration, is the amount of verbal instruction I have been able to obtain, in reward for my trouble. Little more, I regret to say, than has been derived from books. One portion of the agricultural community, numbering some of our wealthiest farmers, and the officials of noblemen and gentlemen, I have usually found difficult of access, as indeed are men of importance in every sphere. Them I have hardly dared to

address interrogatively ; and when presuming, occasionally, on their indulgence, disappointment has awaited me. Another section, including those, in part, whose attention is more immediately and successfully engaged in the practical department of the subject, have shown a readiness to exhibit their stock ; yet on all questions, involving the *modus agendi*, they have preserved a studied silence. A third party, no less distinguished as practical breeders, have been free to communicate what they have known, but for want of clearness of conception, they have been unable, except in few instances, to dispose advantageously of even facts. My undertaking throughout, therefore, has been one of extreme toil and perplexity ; and whatever may be the defects observable in this attempt to make it available to the interest of others, I am fairly entitled to the sympathy of my readers. Let it not, however, be inferred from this expression, that I am anxious to elude the test of criticism. I court it, as the only means afforded me of arriving at a just estimate of my own performance. One indulgence only do I crave—a correction of the sense, where obscurity or error shall be detected ; so that, in the enjoyment of such counsel, my advantages may be multiplied, and truth eventually prevail. Unfeignedly do I protest that, in assuming the character of an autho-

riety, I have no morbid ambition to consult—no personal considerations to promote. I have always thought it desirable to obtain instruction for the farmer, at the hands of those who are professedly engaged in agriculture; and have looked to that source, during the last three years, for contributions to the subject on which I have at length ventured to write, in pursuance of the example of a nobleman, to whom all classes are deeply indebted for his services, in the common cause of patriotism.* I have looked in vain: and believing that I could, in part, supply the deficiency, I have proceeded on the somewhat *novel system of generalization*; and have, in so far, I hope, adapted my labour to the prevailing wants of society. Still am I not without apprehension that, in following the course which philosophy has dictated, I shall subject myself to animadversion. It will be alleged by two classes, that comprise, unfortunately, the chief bulk of my species—those, on one hand, who have *yet to discover* the infirmity of their own nature; and those, again, who, having attained to such knowledge, *affect to believe* that no analogy can be drawn between animal propensities, as developed in man,

* See Lord Spencer's paper on the selection of male animals, in the breeding of cattle and sheep, in the Journal of the English Agricultural Society, vol. i. page 22.

and in the subordinate ranks of the creation—that I have attempted to degrade the noblest work of God to a level with the brute. My defence is simple and easy. Sin has made humanity what it is : I have taken Nature for my guide—“nothing extenuating, nor setting down aught in malice.”

With this apology for the general tenour of the work, I beg to observe that there is one argument contained in it, which, though strictly orthodox, might, if published, give pain to the mind of an individual whom I am bound in duty to revere—and which I had not anticipated, until the entire edition had been struck off. On this account it is my intention to limit its circulation to those, in whose hands it will not be likely to sustain perversion.

Having, originally, designed to instruct those, for the most part, who have not enjoyed the advantage of a liberal education, it has been deemed advisable, when, with propriety, they could be introduced, to accompany the several classical passages with appropriate translations.

THE
RELATIVE INFLUENCE OF THE SEXES
CONSIDERED.

MUCH has been said by agriculturists and others, with a view to impress upon the minds of those whose province it is to breed cattle, a conviction of the importance attachable to good males in the perpetuation of their several species. It is my object, in this work, to bring from the varied sources of information to which I have had access, such facts and reasoning as shall place the subject, if possible, in a more inviting and intelligible light than it has hitherto presented. To do this it will be necessary, in the first instance, to consider the relative character and disposition of the sexes.

Throughout the animal kingdom, it is observable that nervous vigour, from which strength, courage, and all other physical attributes, proceed, is more freely bestowed upon males than females; and that this constitutional difference gives, for the most part, a stamp of activity to

the former, and of passiveness to the latter. It is only under peculiarly exciting circumstances, as when charged with the protection of their young, that Nature awards to females a temperament approaching to that of their male consociates. In no sense, perhaps, is this characteristic distinction more palpable than in the influence of physical love upon the sexes. Take, for example, a male of our own species in the full exercise of a generative faculty, and without that restraint which morality very justly imposes: he seeks to gratify his passion for selfish purposes; no sentiment, in its best construction, identifies him with propriety: the maid, the matron, the virtuous and the dissolute, the cleanly and the dirty outcast, are alike acceptable to him; and, if none be available, he skulks into solitary intercourse with his feelings, and practises the vice of onanism. His disposition, still further outraged, prompts him to ravishment and other personal abuses, which the Christian shudders to contemplate. Physical love, therefore, in our own sex may be said to exist, for the most part, in an active and selfish form. Now contrast it with a kindred faculty, as exemplified in woman. Less powerfully influenced by nervous impulse, she acquires the art of self-government in so far, that neither the presence of stimu-

lating fluids, nor of men, offers her an inducement to become actively regardless of the obligations of her sex. She waits to have called forth a latent disposition to sexual commerce, by the personal attentions and entreaties of man ; and if the wiles of the seducer betray her into sin, she yields assent for his gratification more than for her own. She is persuaded to believe that her indulgence of the individual addressing her is indispensable to his happiness,—and her acquiescence, whilst originating in amiableness, is made, for want of yet more self-possession, to constitute a crime. In marriage, too, a like difference of feeling and of action equally obtains, though subjected of course to that modification which individual circumstances must, at all times, to a greater or less extent, necessarily involve. Physical love, then, in woman is distinguishable from that of man by its passive and relative character ; and any deviation from that law of nature which makes it such, as witnessed in prostitutes for instance, is incompatible with the economy of the uterine system, and forbids conception.* Hence I argue that no

* This doctrine constituted a prominent feature in the Epicurean system of philosophy, as we learn from Lucretius. To quote the original text would, I fear, be only to embarrass the general reader ; and a translation, unfortunately, would subject me to the charge of indelicacy. The scholar may find it by referring to Lucretius, *De Rerum Natura*, lib. iv. v. 1256.

greater injustice can be inflicted on the sex than that which they not unfrequently encounter from pseudo-philosophers and libertines, who ascribe to them less control over their animal passions than is maintained by ourselves.

Observation and analogy will justify me in declaring that the cow, sheep, and sow, when in season, hold the same passive relation to the bull, ram, and boar, which woman does, at almost all times, to her favourite of the other sex. And there being little inconsistency in the operations of nature, we observe in females generally what well agrees with the comparative inactivity of their uterine organs, in a successful copulation, a greater laxity of fibre throughout, than we recognize in males of corresponding character.*

* This condition was strenuously insisted on by the earlier authorities as essential to success in the breeding of inferior animals. Thus Virgil, in allusion to mares, observes:

*Ipsa autem macie tenuant armenta volentes;
Atque ubi concubitus primos jam nota voluptas
Solicitat; frondesque negant, et fontibus arcent:
Sæpe etiam cursu quatiunt, et sole fatigant,
Cum graviter tunsis gemit area frugibus, et cum
Surgentem ad Zephyrum paleæ jactantur inanes.*

Georg. iii. 129.

But when connubial joys new passion fire,
By famine tame the bride's intense desire.
From pampering food and gushing fount restrain,
Tire in the sun, and press along the plain,
When groans the barn beneath the dusty flail,
And the wing'd chaff light flies before the gale.

SOTHERY

Where this distinction duly obtains between the sexes, their offspring inherits, most commonly, the general configuration of the *male*, at the same time that it blends the constitution and disposition of *each parent*, more intimately than would seem to be indicated by the physical outline. To what precise cause such result is attributable, it is difficult to determine. Popular opinion would refer it to superiority of vigour on the part of the male; but that supposition is discountenanced by the fact, that a change of moral circumstances is sufficient to give ascendancy to the female. Observation, directed no less carefully to the habits of inferior animals than to those of mankind, assures me that the venereal passion, viewed simply in regard to its intensity, can in nowise lead to a solution of the problem. It must be considered in relation to the individual included in the embrace; and then it may be in excess, as observable in the healthiest males, or passive, as in a majority of females: the sex that most indulges in abstract voluptuousness—the one least enamoured of the other's charms, is always most faithfully represented in the person of the offspring.

This I will now proceed to illustrate, beginning with an alliance which seems best to harmonize with the original intentions of nature; and thence

advancing to the more subtle forms of association, with a view to disabuse the subject of the prejudice and difficulty with which it has heretofore been encumbered. First, then, I will entertain the case of a duly proportioned man, of nervo-sanguineous constitution (such as is commonly witnessed in the person of a butcher), in a matrimonial connexion with a woman of truly feminine character, who shall have accepted him in the capacity of husband, from a conviction that he is, beyond all others, entitled to her confidence and regard. Taking her estimate to be a just one, he will not be found in constant dalliance at home, but will seek to provide otherwise for her comfort, and give evidence in his own animal propensities, of moderation in all things. Connubial intercourse, in its most delicate sense, will be regulated entirely by the healthful suggestions of nature.* When the seminal vesicles shall have

* Lucretius happily portrays the more solid enjoyment of those who thus fulfil the obligations of their sex, than of the libertine, who wastes his energies in fruitless love :

Nee Veneris fructu caret is, qui vitat amorem ;
 Sed potius, quæ sunt sine pœnâ, commoda sumit.
 Nam certe pura est sanis magis inde voluptas,
 Quam miseris. *De Rer. Nat.* iv. 1066.

Nor are the joys of love from those shut out
 Who brutal lust avoid; the pure of heart
 Far surer pleasures, and of nobler kind,
 Reap than the wretch of lewd and low desires. Goop.

become loaded, his gratification will be sought, and then, almost of necessity, to promote his own personal interest and comfort. His wife, whose moral goodness is implied in the circumstance of her having married him from the purest motive that can influence the female heart, and who, during the absence of venereal excitement, will have passed her time sufficiently requited with an assurance that her domestic attentions have been pleasing to him, will now so far sympathize with his wants, as to account it a privilege to supply them; and whilst he shall be mainly intent on his own enjoyment, she will repose in blissful contemplation of his worth, and leave the task of modelling the foetus to himself. Allowing both parents to remain healthy and discreet, as I have here represented them, their issue will consist chiefly of sons, bearing a strong resemblance to their father, but exceeding him in robustness, unless he be remarkable for strength, in which case, the limit assigned to improvement will have been reached.

Descending again to inferior animals, I will introduce as close a parallel as can be furnished in the instance of an improved short-horn bull, and a light-fleshed milking cow; and, as the objection that would have applied to the use of names in

the former illustration (which, by the bye, is one of many examples I see around me), cannot be urged here, I shall remark that, in the summer of 1836, I bought in Nottingham market, of Mr. Mackley, then occupying a farm at Carlton, about three miles distant, a six-year-old cow for 18*l.*, that produced in three days time, a cow calf, which I immediately disposed of. She milked well, as do most light-fleshed cattle, when feasting on a luxuriant pasture; and knowing that it would be hazardous to attempt to breed a good calf from her, whilst her constitutional energies were being thus actively engaged, I suffered three months to pass over before putting her to the bull. Her frame was at that time considerably attenuated, but it was not actually wasting. The secretion of milk had greatly diminished; and the food with which she was supplied enabled her to sustain the process, at the same time that the carcase was preserved in health. I put her to Mr. Wilkinson's Will Honeycomb; and on the 29th June, in the following year, nine days after the completion of the usual term of utero-gestation, she yielded a cow calf, exactly resembling its sire. The little animal was well provided with new milk, I confess, for some time subsequently to its birth; but its allowance did not, by any means, exceed that

which is commonly apportioned by breeders to their young stock. On the 6th December, some time after milk in every form had been discontinued, she weighed over a very correct machine, 36 stones. By January 5th of the ensuing year, she had increased to 42 stones,—by February 5th to $46\frac{1}{2}$. March 1st she weighed 50 stones,—and on 31st of the same month, $55\frac{1}{2}$ stones. Soon afterwards she was turned to grass, and the scheme of weighing was consequently abandoned. During the two months that intervened between January 5th and March 1st, we had excessively cold frosty weather; and though protected by a shed, in some measure, from its severity, it will be noticed that her growth proceeded more slowly at that time than before the commencement of such weather, or subsequently. In six days under the four months, throughout which her progress was watched, she gained a gross weight of $19\frac{1}{2}$ stones (14 lb. to the stone); and if the improvement realized in those six days be taken into account, the gross increase, in round numbers, may be said to have been 20 stones in four months,—an average of 5 stones a month, from the completion of the fifth to that of the ninth month of the animal's life.

Some of my readers may wish to know a little more of the history of this animal. I will, there-

fore, briefly add that she was pastured on good land, during the summer of 1838. In the winter of 1838-9 she was less indulged, the black leg, a disease allied to erysipelas in the human subject, occurring to a most frightful extent, from repletion, and arrested but by powerful cathartics, early and copious bleeding, together with two incisions of six inches in length, each, through the skin and cellular membrane of the arm on the milking side. In the spring of 1839, with a view to check her disposition to fatten, I secured her a pasture on Beeston Hassocks, the worst I could find in the neighbourhood of Nottingham, where she remained until July; and having failed to conceive a calf, I sold her to a jobber named Porter, for 25*l*. He disposed of her to Mr. Lyon, a dealer well known in the northern and midland counties, who declared to Mr. Wilkinson, myself, and others, that she was the best he had ever bought in his life. In virtue of this opinion he sent her to a friend, who, as often as she came in season, put her to his bull, for the space of two or three months; but she disappointed him, and he sold her, if I mistake not, to a gentleman in Oxfordshire, where, according to Mr. Lyon's report, a short time since, she quickly proved in calf.

Suspicion will probably have arisen in the minds of some, that there was an inherent excellence in the dam of this heifer, not yet acknowledged, to account, in part, for the merit of her offspring. Her pedigree is known to me; and lest its non-insertion should be made matter of complaint, I will give it. At the sale of the late Mr. Champion's stock, when quitting, I believe, the farm he had occupied at Blyth, in this county, many years ago, a cow, named Bridget, then in calf by his bull, Aide-de-camp, was knocked down to Mr. Mackley for 30*l.*, or thereabout. She might be said to be of respectable descent, Mr. Champion having purchased, at the memorable sale of Charles Colling's stock, in 1810, a heifer, called Magdalene, in calf by her sire, Comet, for 170 guineas, from which the best part of his cattle proceeded. I have, however, good reason to believe that Mr. Champion, though a zealous, was not a very successful, breeder. He was an enterprising, generous man; but he could not comprehend the laws which apply to the animal functions, and somewhat failed in his pursuit. Nevertheless his sale attracted much attention; and it is not reasonable to suppose that a beast of much worth would have been suffered to pass into the hands of a bidder for so inconsider-

able a sum as that of 30*l*. She brought forth a cow-calf, which, in contradistinction to the dam, was called Young Bridget; and from her, by a common bull belonging to Mr. Lacey, at that time of Colwick, now of Adbolton, near Nottingham, my cow proceeded. Young Bridget, when aged, was sold, in calf, to a Mr. Neale, in the employ of Mr. Walker, of Eastwood, for, I am told, 15*l*. Whatever importance may be attached by the lovers of pedigree to the animal whose history I have just given, I can assure them that her birth was never, with me, made a subject of much consideration. Scarcely a fair, or even a market, occurs in the midland counties, that does not contain many in-calf cows possessed of greater merit than fell to her share.

To explain the cause of so remarkably good a heifer as the one in question being found to result from sexual intercommunion of a first-rate bull with a comparatively worthless cow, reference must again be made to the law of sympathy. No other theory can avail us. We must recollect that the *animal passions* which influence us, as human subjects, we share *in common with animals of a lower rank in the creation*. The cow, as previously observed, was introduced to the bull under the happiest possible circumstances; and

when she saw a much finer male than had been looked for, one whose like she had never before witnessed, she felt precisely as does a woman of easy virtue, who sighs and falls powerless into the hands of a handsome member of our own sex, so soon as an improper overture is made.* She became instantly absorbed with admiration of his

* For an identity of feeling, on the part of all animals that come under the influence of physical love, philosophers and poets have long contended. Virgil, whom Dryden has vigorously sustained, treats the subject unreservedly in the following verses :

Omne aded genus in terris hominumque ferarumque,
Et genus æquoreum, pecudes, pictæque volucres,
In furias ignemque ruunt: *amor omnibus idem.*
Georg. iii. 242.

Thus every creature, and of every kind,
The secret joys of sweet coition find :
Not only man's imperial race, but they
That wing the liquid air, or swim the sea,
Or haunt the desert, rush into the flame ;
For love is lord of all, and *is in all the same.*

So also Lucretius, to whom Virgil was probably indebted for the argument :

Nec ratione aliâ volucres, armenta, feræque,
Et pecudes, et equæ, maribus subsidere possent.
De Rer. Nat. iv. 1190.

And Thomson, in a passage of inimitable beauty and pathos—too long for insertion here, but the purport of which may be gathered from the lines I have selected—equally subscribes to this view :

'Tis love creates their melody, and all
This waste of music is the voice of love,
That even to birds, and beasts, the tender arts
Of pleasing teaches. Seasons, i. 611.

beauty, and consequently imposed upon him all the responsibility attached to the first grand formative impression. He was two years old, in the pride of health and condition,—a circumstance never lost sight of by a breeder of judgment; and regardless of individual attractions, he served her, as he would have done any other female of his species, that should have invited him, to gratify the irresistible promptings of voluptuous ardour.

That the subject may be fairly argued, Mr. Berry's rationale, which may be instanced as the one most commonly received, shall now be heard. After remarking that the characteristic of a well-bred animal is that which identifies its ancestors for several successive generations with the peculiarities in constitution and shape which it is the object of experienced graziers to obtain in their stock, he proceeds to contend that "the ancestors of a badly-bred animal will probably have varied in every possible way, and therefore there will be no distinguishing characteristic in its family. It is consequently most probable that the offspring produced from a cross between two animals so circumstanced, will be more like the one in whose family there is a distinguishing characteristic than the one in whose family no such character-

istic exists." Now if the ancestors of a badly-bred animal have varied in every possible way, what comes of the adage that "like will beget like?" In few words, the characteristic of a well-bred animal is to be found in an assemblage of good points,—that of an ill-bred one in an assemblage of bad points,—and unless my explanation of the most frequent result of a union of the two be admitted, we are driven to the necessity of arguing that, in a physical sense, a law obtains, the reverse of what we recognize in morals,—where good and evil are associated, the former gains an ascendancy. But to adopt this construction, *in principle*, it follows that an ascendancy, once established, should, *cæteris paribus*, be pretty steadily maintained: whereas we have only to breed from the product of extremes, amongst themselves, as will hereafter be more circumstantially shown, to discover the futility of such reasoning.

It cannot be denied that, though the physical character of the offspring is conferred most frequently by the sire, there are many instances wherein it seems referable almost entirely to the female. Such may occur even in the history of parents whose union I have represented as conducive to an opposite result,—either accidentally,

as when, in acknowledgment of female blandishments, the husband is induced to contract a generative intimacy, without the healthful incitement of a truly masculine desire,—or, as not uncommonly happens, when a change of circumstances or of bodily condition supervenes on advancing life. The common reward, say, of toil and carefulness, is discoverable in an improvement of their estate; and wishing, perhaps, to employ their savings in some business that shall admit of being conducted by the wife, whilst her husband pursues his accustomed labour, they open a retail shop, or embark in the “public line.” And now, indeed, conflicts with the world, to which she has previously been a stranger, gradually obliterate those indications of moral and physical delicacy which have won for her the esteem of a private circle, and a twelvemonth’s exercise in her new calling exhibits her an altered woman. Grown haughty and sensual, she conceives possibly a secret fondness for another man, and regards her husband only for the grosser purposes to which he can be applied; whilst he, observant of the change, thinks to recover the favour he has lost by enacting the part of a suitor once again. He takes on more or less of a maudlin character,—defers to her in all things, and their

future progeny consequently bespeak the impress of their mother, and consist, for the most part, of females. A further rigidity of character—and the masculine temperament is, in so far, acquired, as to unfit the subject altogether for breeding.

Now, what is thus being continually exemplified in our own species, occurs also amongst inferior animals. The cow I have already mentioned as the parent of an excellent calf, may be adduced in illustration of a reverse order of things, on being again put to the bull. She was one of high nervous excitability, as will be readily understood when it is stated that she had a bold staring prominent eye, and that, in attempting to handle her on the day following that on which she was purchased, and but a few hours before calving, she deliberately walked through one of the best constructed dead fences I ever beheld, lacerating her teats most frightfully. She required to be kept, as do all females of that class in particular, in low condition, to preserve the feminine attributes in their integrity. I lost sight of this fact, and presented her once more to Will Honeycomb, fresh, and in a high state of generative excitement, having two germs fitted for impregnation. The bull had grown rather too fat—therefore, taking on some degree of passiveness, the “ruling passion” was

hers, and in forty weeks' time she gave birth to twins exactly resembling herself, and died soon after of puerperal fever. Thus, it will be seen from this example, which will be found to correspond in its result with many like experiments, that where male and female of dissimilar character are coupled, a compound, partaking equally of the properties of both parents, does not commonly follow: nor do I believe that such can well happen under ordinary circumstances. And I derive no mean contribution to this theory, from the concurrent testimony of those who have attempted to commingle two distinct varieties of cattle. A cow of Scottish birth, say, is put to a pure Durham bull, until a calf of each gender is obtained: admitting that they intimately combined the properties of both parents, and thus furnished what might be termed a singleness of character, it follows that they should, when placed in sexual apposition, perpetuate their species in an undegenerate form. Experience, however, tells us that this is not the case: they mostly deteriorate. They may exhibit decided evidence of activity and predominance on the part of their sire in the intercourse that called them into existence; but still there will prevail some inherent and distinct characteristics of the dam, which admit not

of assimilation. The parents being “aliens in blood,”—so far removed from all influence of consanguinity as to be recognized only as individuals of the same species, there is a distant approach, in their reproductive exercise, to that outrage on nature which is committed when two animals of different species, as the horse and the ass, are suffered to procreate. If, then, their offspring be paired, the secret antagonism of their better qualities, though insufficient, as in the instance of a mule, to forbid conception, is excited to activity, and, like the bed of a healthful spring, when thrown into agitation, corrupts the entire stream. To justify the breeder’s favourite maxim, these animals, since they betray outward evidence of a closer relationship to the sire than to the dam, should perpetuate their likeness through succeeding generations. But as well might we expect, by associating in marriage two persons of cultivated moral character, to witness a freedom from sin in their issue. The inveterate propensities of nature, whether moral or physical, are not thus easily disposed of; and I know not an adage that has prejudiced the interests of breeding, when used, as it most commonly is, in a wide and unconditional sense, so much as the trite saying that “like will beget like.”

Unfortunate as it may sometimes appear, that the constitutional peculiarities of an animal associated, by accident or necessity, with one whose distinguishing characteristics we may wish to superabound, cannot be conveniently annulled, it deserves to be considered that the same law which binds it to a perpetuation of its individual kind, we recognize as the pride of our hope in those of a happier mould,—and that it is but a literal application of the command originally instituted by Him who created all things, that the “earth should bring forth the living creature after *his kind*, cattle and creeping thing, and beast of the earth after *his kind*.”*

* For wise and beneficent purposes, the laws which preserve the various ranks of animals from generic intermixture, were originally constituted absolute in their operation. Had they been otherwise, we should have lost very early, in the history of the world, all trace of distinct and specific breeds; and the fabled stories of Centaurs, Scyllas, and Chimeras, would have been submitted to posterity as so many faithful portraiturees from real life. No misapprehension, however, prevails upon the subject, amongst those who either consult the accredited testimony of past ages, or estimate aright the evidence afforded by their own senses. For whether roaming at large, unrestrained by the authority of man, or subjugated to his will, all living nature declares, that whatever God has created for our use, and His Providence secured from the perils of the flood, shall enjoy the faculty of maintaining (subject only to the modifications which belong to diversities of climate), through endless generations, their pristine form and character. Hence all attempts to cultivate hybrid animals, combining the properties of two distinct species, as mules do, for example, those of the horse and ass, are directly at variance with the intentions of nature, and can extend no further than the generation which imme-

Now suppose one of these animals, descended from the Scottish and Durham breeds, say the

diately proceeds from such unnatural alliance. Under no circumstances of which I have any knowledge, has it been found that mules are capable of perpetuating the individual qualities thus imposed upon them, by sexual intercourse *amongst themselves*. And so remarkable is the difference of constitution observable amongst the several kinds of animals, that the blood of the ox cannot be injected into the circulating system of the sheep, in any considerable quantity, without incurring its destruction, though both shall share in some degree the same common properties, and be subjected to similar treatment. They are both, for instance, seen equally to delight in the same vegetable product; both chew the cud, and are unanimously allowed, by Jews and Christians, to furnish an appropriate food for man; and yet so distinct and unlike are they in the secret constitution of their nature, that the blood which, in each case, is elaborated from one common food, by one common process, and made subservient to one grand ultimate design, cannot be transfused from one to the other, without endangering the life of its recipient. On the contrary, an intermixture of the blood of two oxen, two sheep, or of any other pair belonging to the same species, may be practised with impunity—a circumstance that tends still further to prove that, to each of the ranks that comprise the vast catenation of living animals, belongs a peculiar and inherent principle unknown to the rest, and which neither depravity of instinct, nor human interference can, in anywise, disturb. The fact is recognized by Lucretius, lib. i. 278, and again in the following passage:

Lanigeræ pecudes, et equorum duellica proles,
Buceriæque greges, eodem sub tegmine cœli,
Ex unoque sitim sedantes flumine aquaï,
Dissimili vivunt specie, retinente parentem
Naturam; et mores generationis quæque imitantur.

De Rer. Nat. lib. ii. 660.

The steed, the steer, the fleecy flock that range
Beneath the same pure sky, from the same fount
Their thirst that quench, and o'er the flowery lawn
Crop the same herbage, differ still, through time,
In form generic; each parental stamp
Retaining close, from sire to sire propelled. Good.

heifer, be put to a short-horn bull (if to her sire the better), the contending disposition of the northern variety, to gain ascendancy in the product, will be negatived by a preponderating influence of the opposite party; and, after a few generations, it will be thrown into complete abeyance. Henceforth is there no longer a prevalence of conflicting interests; one blood having been mainly adhered to, we discover an identity of form, feature, and habit in the family, whose members consequently assimilate as readily and harmoniously as do globules of quicksilver when brought into contact. This fact was turned greatly to the advantage of the original improvers of both the long and short horns, who were, doubtlessly, men of very accurate observation, and of strong reasoning powers. It was enough, probably, for them to learn that a similarity of feature and complexion in our own species, involves pretty much a similarity of disposition and temperament, to conceive the further idea that, by breeding from animals thus allied in constitution, they should be best enabled to preserve such constitution unimpaired,—and in no way could the alliance be so well secured as by in-breeding. So well did the scheme answer, that its propriety as a rule in practice became established: and no less success-

fully, is there good reason to believe, the practice to have been conducted in the human subject, as well amongst the antediluvians as subsequently. But though in a fleshly sense it might succeed, it is equally clear that it must have unfitted man for the more exalted duties assigned to him by his Maker, and that, for wise and beneficent purposes, therefore, it was proscribed in the Mosaic dispensation. Still do we sometimes witness intermarriages, in contempt of the divine law, amongst those who are near akin; and not unfrequently do we observe the contractors of such affinity doomed to sustain the penalty attached to mental or bodily infirmity in their immediate descendants. The subject I heard first introduced by the late Dr. John Armstrong, who, when alluding to the physical defects of humanity, contended that they were more commonly induced by intermarriage on the part of those of kindred blood than by any other cause. I have since most carefully marked the issue of every alliance of this character that has fallen to my notice; and though I have often observed immunity from congenital ailments, it has been my lot to discover many instances of less fortunate result. To enumerate them would be to encumber the reader with a bare multiplication of

facts ; and as the names of the parties implicated could not with propriety be included, I shall confine myself to one case by way of illustration. Many years ago, I attended in labour a married woman of this town, who, on recovery, asked if I could suggest a remedy for a complication of ills occurring to two sons of the respective ages of seven, and nine, years. They were possessed of common intelligence ; but the senses, as they are termed, were constitutionally blunted. Their vision was imperfect, and the margin of their eyelids habitually sore. They were deaf, and consequently unable to speak : taking them all in all, they were the most pitiful anomalies I had seen. It occurred to me that they might, possibly, be the offspring of cousins ; and, on asking whether the husband and wife were related, except by marriage, they looked intently at each other for an instant, when the former exclaimed, “ Oh ! he means your first husband.” They were the produce of a matrimonial conjunction with a male relative.

It will be remarked by all who have attended to this occasional infraction of Nature’s laws, that its explanation is involved in very considerable obscurity. The case is somewhat analogous to that of the descendants of the Scottish cow and Durham bull,

when allowed to procreate, except that there is not usually so much consentaneousness of feeling and action. There we have an issue from remote varieties,—but reared alike, and enjoying precisely the same advantages in respect of locality: the struggle for supremacy in the next generation would therefore seem to be equal; but as it is always easier, in the natural constitution of things, to negative a good purpose than to accomplish one, when even unassailed by opposition, the victory is most commonly gained by the less meritorious of the two rival powers. In the instance of cousins, it is most probable that they do not equally partake of the blood from which they have been each derived. Their parents on that side, unless they shall have been twins, may have differed in character—consequently there is no uniformity of action in the secret springs of reproduction: the interests are too many, and too variously blended to admit of it; and, as an ill-directed agency in physics is usually attended with disruption somewhere, so we have in their progeny deterioration to a greater or less extent. A fixedness of character on both sides, whether in favour of the common blood from which they shall have proceeded, or otherwise, least of all endangers their union. Precedence is then more readily

maintained, or yielded to the opposite party, and less risk of violence incurred to the issue.*

Perhaps the most familiar illustration of female ascendancy, in a copulative sense, is that which, in the human subject, a lymphatic temperament affords. People of this class are known by a general paleness and softness of skin, by a rotundity of form and feature, by their disposition to obesity, and by the colour of their hair, which is mostly flaxen, red, or auburn. They commonly possess little sensibility, having no care to sympathize with others in affliction, or to participate with them in pleasure. Selfishness is their prominent characteristic; and however hearty may seem their professions of friendship, the wary receive them with caution. They are easy of access; but the

* He who regards the proceedings of our legislative assemblies, will hardly fail to be reminded here, of an act passed a few years since (or rather a restoration of one, grown obsolete), prohibitory of marriage on the part of a man with a sister of his deceased wife. Such interdiction is professedly based on that portion of the old canonical law, which declares "Thou shalt not take a wife to her sister, to vex *her*, to uncover her nakedness, beside the other in her life *time*."—Lev. xviii. 18. But what authority this passage affords for so unrighteous an interference with the liberty of the subject as that complained of, I have never been able to divine. The mutual incentives to marriage, where death has removed the only legitimate obstacle to a union, have their origin, most commonly, in the best feelings of our nature. The rite is perfectly agreeable to the ordinances of God himself; and that enactment which forbids it is framed in injustice—is a blot upon our statute book—and alike discreditable to all who were concerned in its adoption.

female portion reciprocating but faintly the attentions bestowed upon them by our own sex, it rarely happens that they obtain in marriage a truly independent-minded man. A wife so constituted seldom neglects to consult her own ease and indulgence; and the apathy she betrays in her general dealings with society, is either exemplified in coition, or she becomes a party to the contract for her own express gratification. The husband, on the contrary, is generally one of nervous excitability, fond of dispensing favours to the other sex, and who, impressed with an idea that there is something more to be won by attention than he has yet merited, presses his suit with the tenderness of one actually on preferment. He considers it a matter of proud distinction to be suffered to caress her; and with the enthusiasm, therefore, of a devotee, does he engage in the pleasure of venery. In accordance with the doctrine I maintain, the physical character of the offspring, in such case, is determined by the mother, whilst the nervous attributes, involving temper, disposition, mental capacity, &c., are inherited from the father, in proportion to the extent to which they shall have been lavished on his wife. We then witness the curious anomaly of a lymphatic subject, imbued with the ardour of a highly nervous principle,

many instances of which, occurring to persons distinguished for intellectual endowments and licentiousness, might here be adduced.

So discordant an admixture of elements would, however, seem to be at variance with the intentions of Nature, whose efforts we shall presently see directed to a restoration of the balance thus lost in her operations,—for it rarely occurs that persons of this class are faithfully represented in their progeny. The *animus* of the male parent prevails over the medium through which it is distributed; and the next generation, unless overruled by a contending power, discovers a more slender form, with the spirit of the grandfather. And thus do we once more arrive at an exposition of the secret of “breeding back,” as it is termed. Spirit will prevail over matter; and it is because the produce of the Scottish cow and Durham bull, though exhibiting the frame of the latter, possess the nervous principle of the former, that they develop the characteristics of their dam if allowed to propagate. The splendid calf begotten of Will Honeycomb, and resembling him so nearly in general structure, presented some local features, as the eye and feet, precisely corresponding to those of her dam; and so nearly allied to her in disposition and habit was she, that a little

tremulous motion of the muscles of the thigh, on being relaxed, whenever the weight of the body, whilst standing, was thrown off one hind extremity upon another, was observed with equal exactness in them both.

It has been attempted by pathologists to reconcile scrofula with certain habits of body, which they have laboured to describe by reference to feature, hair, complexion, &c. ; and it is amusing to see that by such time as the most accurate of them have concluded the catalogue, they have embraced every temperament that words can well express. This they have felt compelled to do, in as much as the disease has been detected in those persons whose contour would, *a priori*, have seemed to claim for them an exemption. A man, for example, of huge chest, and betraying other indications of hardiness, has died of true pulmonary consumption—a disease essentially scrofulous in its nature, and which has most likely been thus incurred : his father has been a man of fine structure and constitution,—his mother of delicately interesting, though of scrofulous character—attached to her husband in the best sense that distinguishes a woman, and yielding, therefore, in her admiration of his person, the plastic office unto him, at the same time that she has infused,

by virtue of such exercise, her own radical disposition, with all its concomitant advantages and ills, into the offspring.

Independently of the direct authority which observation affords for the establishment of this doctrine, collateral evidence is not wanting to justify its adoption. We know that mental impressions received by a female, even subsequently to conception, from remarkable objects occurring unexpectedly to the sight or touch, inflict, not unfrequently, corresponding and indelible evidence of such impressions on the foetus, whilst at the same time we negatively prove that, in the mother's keeping, its native character is preserved uninjured. A friend of mine had, some time ago, a sow of highly nervous temperament, on whose back, as she one day lay asleep, when somewhat advanced in-pig, he suddenly placed a child. She started up in great fright ; and, in the next litter, was one pig denuded of hair across its back, and partly down its sides, though otherwise well covered, as were all the rest of the family. Jacob's device for obtaining cattle "ringstreaked, speckled, and spotted," is known to every reader of sacred history ; and a fact recorded by Mr. Boswell, in an Essay on the Breeding of Live Stock, and quoted by the editor of the popular treatise on

cattle, as published under the superintendence of the Society for the Diffusion of Useful Knowledge, so well illustrates the question before me, that I cannot forbear to transcribe it. A gentleman in Angus had a cow in "season, while pasturing on a field which was bounded by that of one of his neighbours, out of which an ox jumped, and went with the cow, until she was brought home to the bull. The ox was white, with black spots, and horned." The owner of the cow "had not a horned beast in his possession, nor one with any white on it; nevertheless, the produce of the following spring was a black and white calf, with horns." It is obvious that she had become enamoured of the ox which had accompanied her awhile, and though ultimately impregnated by a black bull, she retained so vivid a recollection of her former associate, as to involve her issue in a resemblance of him. But that very operation of the sentient principle which brought about this result would pervade the tiny embryo so thoroughly, as to communicate to it the intestine characteristics of its dam; and the bull through whose agency conception was effected, would have virtually no more part nor lot in the scheme than would be discoverable in some unimportant local peculiarity. On the same authority it is stated that, upon a farm where pure

black doddies were bred, but along with which an Ayrshire cow (red and white) was kept for some time, there appeared three red and white calves in one season, and two in the following, when the proprietor, to break the charm which had been unfortunately introduced, disposed of the Ayrshire beast, and adhered inviolably afterwards to black animals, down even to pigs and fowls.

Referring again to sexual commerce on the part of a lymphatic female and a man of nervous excitability, I would just observe that, should reproductive intercourse between the parties be ill-timed, as when the husband executes his function without his accustomed zest, the produce is found to inherit a proportionable degree of inactivity; and, having commonly a huge frame to command, with so small an amount of nervous power, it rarely happens that such individual attains to more distinction in society than that which applies to mere animal existence.

A narrative I would now subjoin, as related to me a short time since by one of the principals in the drama, on whom I was then in attendance, in which two persons of the respective habits I have been treating were concerned. It well exemplifies the general truths I have been attempting to enforce, inasmuch as there is scarcely a link

broken in the chain of evidence by which the case is supported. A gentleman, combining with much intelligence a considerable share of sensibility, was accustomed to visit an establishment in which resided a maid servant of prepossessing exterior, for whom he conceived a strong attachment. Once only did he gain an opportunity of conferring with her in private; and then his solicitations were met by so decided a remonstrance, that it seemed doubtful whether the influence of fascination could extend to her. At length she failed to preserve due self-possession, and whilst “whispering she would ne’er consent—consented,” at the same instant bewailing her irresolution in a profusion of tears. However it may suit the interests of poetry, it is wholly irreconcilable with philosophy to suppose that a concession, thus procured, is to be received in evidence of love for the individual to whom it is rendered. But if testimony more conclusive than that which induction supplies be required in this case, it is abundantly discoverable in the subsequent history of the parties. The girl proved to be with child; and though the gentleman to whom the charge of paternity applied, entertained a doubt, for some time, concerning the truth of the imputation, yet did he place her, at his own cost, under the guar-

dianship of a creditable family, with whom she has already remained a year beyond the period of her delivery. Nevertheless, I am assured, not only by her patron, whose unsupported assertion I should *cautiously* admit, but by the people in whose house the girl resides, that, with a view to guard against the possibility of danger, she has, throughout her stay with them, refused to hold any communication with him, except in the presence of a third person. Now let it be borne in mind that this girl's mother is of a bilious habit, and subject, together with two sisters yet living, to biliary concretions (gall-stones). The girl herself presents external indications of a lymphatic temperament—an exact similitude of her father; but so strongly does she partake of the constitutional bias of her mother, that on several occasions I have known her jaundiced from the mechanical interruption to the passage of bile, incurred by the lodgment of gall-stones. And mark how this innate principle of the mother prevailed in conception! The girl had no fondness for her paramour,—selfishness, for the most part, induced her, after all, to yield to his importunities: whereas he loved her most tenderly, and conceded the right which she claimed to model the fœtus, by reason of her abstract passion. The child (a

female) was consequently born with eyes like those of its mother, but conveying, in every other lineament, a miniature representation of its grandmother. No feature identified it with the putative father, save that of its nails which dissipated at once all doubts that had been previously indulged respecting its descent.

Conformably to the doctrine I hold, this child should assume the constitutional habits of its father,—and that in some degree it does so, is already demonstrable; but his contributive services, it must be remembered, like those of the bull to which the Angus cow stood, after having been waited upon by a black and white ox, were, in a great measure, negatived by the internal conflict to which the girl became a prey at the instant of conception—and, as the sequel proves, to so fearful an extent did the law of sympathy involve the rudiments of the fœtus in the grief incurred at that momentous period, that these two persons, both of whom are highly regarded in their respective spheres, for amiableness of disposition, stand as the authors of one of the most miserable wretches that ever took on the form of humanity. Though in the enjoyment of rude health, it cries almost unceasingly; and an umbilical hernia, consequent thereon, has already, in defiance of every

effort of art, attained to such magnitude, that I shall not wonder if, in a few years hence, as in the instance of the late Horne Took, it carry the chief bulk of the chylopoietic viscera without the abdominal cavity.

Were it possible to note the circumstances under which impregnation occurs in the human subject, much of the inconsistency, made chargeable on nature, would admit of satisfactory explanation. Passions essentially animal are, of necessity, cultivated in a mutual embrace of the sexes ; and they are so variously developed in different individuals, and in the *same individual* at different seasons, that uniformity of result cannot possibly be obtained in successive acts of reproduction. Hence, the moral and physical variability observable in families proceeding from a like source. Amongst the unreflecting it often creates surprise, that children of seemingly religious parents should be with difficulty reclaimable from the follies and extravagance of youth. To say nothing of the frequent assumption of Christianity, as a matter of worldly policy, and the consequent irreconcilableness in the profession and practice of such people, it is to be kept in view that religion, in its true sense, is *an acquired grace*, and that, however admirably it may be

suited to the regulation of our conduct in reference to God and to our neighbour, there are seasons when the best portion of mankind lose sight of its obligations,—and at none more palpably than in the matrimonial intercourse of the sexes. Devotion, whether in an arbitrary or strictly righteous signification, is incompatible with sensual indulgences. The former is verified whenever love, in its purest sense, disposes a man to address a virtuous woman. Deference to her expressed or implied opinion, and watchfulness over her for good, take the place of fleshly considerations: it is only when equality and identity of interests are established on marriage, that he feels her to be accessible to him in a grosser capacity. The latter is demonstrable in the lives of those who, whether attached to monastic institutions, or otherwise, are distinguished by a oneness of purpose in their worship of the Everlasting Father: they preserve a course of rigid celibacy, that no interruption may occur to their intimate communion with God. All spiritual association, therefore, in its noblest construction, is suspended during the period of sexual correspondence, and the natural character indulged; and when to the fact that prudent men seek such gratification only when impelled by the salutary

dictates of nature, and consequently incur a liability to beget a robust offspring, is added the *persecution* too often employed in the persons of their children, whilst young, to enforce an observance of religious ordinances, the cause of insubordination amongst them is pretty clearly made out. To dwell on the probability that, in many cases, the parties are “unequally yoked,” and that a moral taint may be thus inflicted on the progeny, or to entertain the evils arising from unfortunate communications at school and elsewhere, would be to extend my observations beyond the limits assigned to them in this place. I would, however, remark that whilst faculties of an objectionable character are engendered under circumstances favourable to the moral interests of society, and transmitted from parents to children, how justly is the crime of illicit intercourse to be deprecated, since it calls into exercise some of the worst passions of which we are susceptible. The nervous vigour that prompts to its indulgence, and confers, not unfrequently, upon bastards a prowess for which, in every age of the world, they have been remarkable, entails upon them also a recklessness of disposition inimical to usefulness, in the solemn and more important duties of civil life. So generally has the fact been recognized,

that it was anticipated, even in the alliance of Abraham with Agar; and perhaps no better evidence can be had of the divine origin of the Pentateuch, or of the truth of the principles which I am desirous to convey, than is furnished in the history of Ishmael and his descendants. Whilst yet a lad, he was banished from the land of his father for filial disobedience; and, when having wandered, with his mother, into the wilderness of Beer-Sheba, the prediction that he should be “a wild man,” and that “his hand should be against every man, and every man’s hand against him,” was literally fulfilled in him and his posterity. For, though “many potentates amongst the Abyssinians, Persians, Egyptians, and Turks, have endeavoured to subjugate the wandering or wild Arabs, whose possessions may be said to extend from Aleppo to the Arabian sea, and from Egypt to the Persian gulf,—a tract of land not less than 1800 miles in length by 900 in breadth, yet have they been ultimately unsuccessful.” Having cultivated close affinities, like the other descendants of Abraham in the line of Isaac, they are the only inhabitants of the earth, besides the Jews, that have existed as a distinct people from the beginning; and the original habits of their founder having acquired an inveteracy, *by reason*

of such practice, it is easy to conceive that the various tribes of which they consist, will ever be found difficult of foreign subjection, and of moral culture.* A consciousness of the danger of confiding offices of trust to the keeping of an illegitimate product, led the ancient Israelites to refuse them all participation in civil privileges, even down to the tenth generation; and it is not improbable that an intuitive knowledge of the worthlessness

* The specific institutions of Nature for maintaining in perpetuity the characteristics of such animals as would otherwise suffer from domestic interference, can hardly be contemplated without reference to the wisdom and goodness of Him, at whose instance they were established. The requisite irritability of cats, for example, is guaranteed in the uproar they preserve during the act of copulation; and the seeming affright in which the tame female rabbit invariably runs, pursued by the buck, before yielding to his importunity, secures to her young a like property, in no less degree than is shared by those which are born of wild parents,—as proved in their jerking, involuntary efforts to escape, if disturbed, when even a day or two old, and by other manifestations of impatience, till lulled into quietude by persevering familiarity. The Arabs, who are a shrewd race, I suspect to have been long aware of the influence, on the offspring, of impressions received by parents, about the period of reproductive intercourse, and to have derived no little advantage from such knowledge, in the breeding of their celebrated horses. I know not whether the experiment has been adopted in our racing establishments, but it is worthy of trial, when a mare is ascertained to be in season, to canter her briskly, say half, or three quarters, of a mile, to the place where she knows the stallion to be in readiness to cover her. A foal so obtained, I am disposed to think, would, *cæteris paribus*, possess a fleetness and emulation far exceeding such attributes in one—engendered “between sleep and wake.” The principle was urged by Columella, in its application to the stallion (Lib. 6, cap. xxxvii.); but, for reasons which cannot here be conveniently discussed, it most properly applies to the mare.

of this class provokes the contempt with which they are almost invariably treated. Every man of reflection, however, must learn that the issue of an unlawful connexion presents a peculiar claim to the exercise of sympathy; and whilst the difficulty experienced in adapting them to the more dignified purposes of life shall continue to be a subject of complaint, it should incite both sexes to a maintenance of self-government, at variance with the cause of so frequent and unhappy a result.

Corresponding to the lymphatic temperament in the human subject, may be noticed, now and then, in almost every variety of cattle, a figure combining neatness with a singular disposition to fatten. The particular indications of such disposition consist in a bright placid eye, a somewhat rotund, but smaller, chest than belongs to those which are equally remarkable for muscularity,—a thin, soft, unctuous skin, and a close covering of fine, glossy, silk-like, hair. If pastured on moderately rich land, that yields not a very succulent herbage, an animal of this kind quickly grows fat, but seldom answers the purposes of the dairy. Of a truth “self-preservation,” with her, “is the first law in nature,” and nothing short of treatment that shall impose a general laxity of fibre, can make her

available to any other interest than that of the grazier. In keeping with such constitutional selfishness, a beast of this class not uncommonly fails to breed, or, in the event of conception, she furnishes a product more nearly approaching to her own likeness than to that of the bull to which she has been affianced. But as no instruction can be so well conveyed as in its immediate application to practice, I will illustrate this part of my subject with the history of an animal that was long in the possession of the late John Wright, of Lenton, Esq. When passing through his land about six years ago, I was arrested by the singularly elegant appearance of a red cow ; and, being desirous to know her origin, I sought an interview with the ground bailiff (Rouse), who told me that, when three years old, she was bought, along with another of like age, and of nearly equal quality, of Miss Evans, of Beeston, for 30*l*. She had bred several calves, most of which were females—red, and inheriting her native properties in rich perfection. Two of these descendants, a three-year-old heifer, and a two-year-old, were shown to me. The former was exceedingly symmetrical and fat, and, according to the testimony of my informant, had been repeatedly, but fruitlessly, bulled. Tradition ascribed to the dam a distant connexion with Mr.

Wilkinson's cattle; but as evidence to that effect appeared, by no means, to be satisfactory, I could only conclude the alliance to have been of very remote date. Mr. Wright having no predilection for good stock, she had been always put, in common with other cattle upon the farm, to a bull of mean birth; yet under such disadvantage had she bred the heifers to which allusion has been made. At this stage of the detail, I may as well remark that the oldest heifer, continuing to disappoint all hope of impregnation, was sold to a butcher on the 7th March, 1837, when four years old, for 38*l*. Feeling interested in the character of one which, without any valuable adjunct, had thus distinguished herself as a parent, and being assured that the sole management of the farm was intrusted to Rouse, I offered him 30*l*. for this cow, when ten years old, in low condition, and worth, at most, but 18*l*. in a market. The man, however, knew his master to be rich, and was pleased to conduct affairs rather in compliance with the dictates of caprice than with a view to considerations of profit, and so declined my offer. I next submitted that he should introduce her and the younger heifer, not yet in calf, to Mr. Wilkinson's favourite bull, and, whether male or female, I would give for the produce of each, at birth, five

guineas. To this he would not agree ; but, thinking it might be well to speculate on my proposition, he put one to Will Honeycomb, and another to Frank, as he was called, and waited the result. The cow brought twins (male and female), one of which (the female) died at birth, or immediately after ; the other I was offered on the terms originally proposed : I refused it, though it bore a close resemblance to its dam in colour, shape, and quality. It was eventually disposed of to one of his kindred in Leicestershire, in whose service it has been employed nearly three years. I am told that, as a bull, he has always handled well, but, like his dam, has never made much flesh. The daughter produced a bull calf, radically defective, but the farmer thought otherwise : “ it was well timbered,” he said, and “ spawny ;”^{*} and being desirous to make these properties available to the *interest* of his friends, he sold it to one of Mr. Wright’s tenants, a highly respectable farmer in the vale of

^{*} He who has been accustomed to hear the word “ spawny” used in reference to young animals, without troubling himself about the propriety of its application, knows well the sense intended to be conveyed. A “ spawny” animal is one whose aggregate length and height far exceed the proportions of its trunk, and is commonly regarded by those who enjoy not the faculty of observation in an enviable degree, as “ *promising to grow into a good one.*” Should it be “ well-timbered ” withal, and equally well fed, it may be expected to carry as much flesh as will enable it conveniently to sustain the office of locomotion.

Belvoir, who kept it nearly two years, and then killed it in disgust. Once more I proposed to stipulate with Rouse for the produce of both mother and daughter, but, failing in my negotiation, I neglected to visit the farm. Intelligence, however, reached me that the cow had slunk her calf, and been sold in Nottingham market for 13*l*. The heifer, in due time, bred a cow calf, which was kept upon the estate. Again she calved, and soon after died—the carcass realizing 20*l*. to one of our Nottingham butchers.

In what manner those who contend for an absolute and unconditional control of the sire in the breeding of stock, will meet the difficulty involved in the consideration of this red cow and her offspring, I know not: to my mind the case admits of very easy solution. She entertained just as much physical love for the bulls to whose gratification she contributed, as does a handsome voluptuous woman for a man who, in the absence of personal attractions, commands neither wealth, rank, nor mental accomplishments. Governed by the influence of a generative passion, the cow would stand alike to the vigorous and emasculated; but whilst one might have possibly enkindled in her affections a generous recognition, the other

would be received with comparative indifference.* Let him who doubts the justifiableness of such analogy, mark the identity of feeling in man and brutes, where moral refinement softens not the heart. Let him witness the seeming cordiality with which a member of each sex, from out the lowliest rank of civilization, will conduct a tête-à-tête, till startled by a rival lover,—and when the first suitor shall have been soundly pommeled, view the *fair* subject of contention “pair off” with the hero in all the majesty of brutal pride;—and then turn to a party of domestic fowls, absorbed in an affray between the male partner of their joys, and a spirited intruder. A few minutes decide the fate of their old associate: he is beaten; and one short valedictory blessing terminates their acquaintance with him. The adage that “none but the brave deserve the fair” belongs not exclusively to any particular section of the animal

* An objection may be taken to this argument, since the surviving calf of twins, *begotten of a first-rate bull*, appears to have inherited his dam's general character. The fact of his having done so tends but to justify the portraiture I have drawn of animals of the lymphatic class. The cow's native habit triumphed over the charm of individual attractiveness on the part of the bull; and, without considering the *general argument* at all disturbed, I am bound to confess that the allurements employed in this instance were insufficient to accomplish the purpose for which it was designed.

kingdom: it is of universal adoption, though influencing its votaries in proportion to the extent in which sensuality shall prevail. Hence it is not uncommon for a female, as a sow for instance, whose fondness of the boar is proverbial, when in despair of being requited for her visit, to attempt what she would delight to see another member of his sex accomplish—an infliction of bodily chastisement. If the male conquer, as most frequently happens, a two-fold object is secured—the sow regards him with admiration, and the nervous excitement engendered in the struggle, prompts him to the service which he had hesitated to perform, and impregnation follows. It would be equally absurd to argue that a boar, under such circumstances, would beget a good litter, as to insist that the sire of Mr. Wright's heifers conferred upon them the properties for which they were esteemed. He felt, on being introduced to the cow, as would an ill-conditioned man, if invited to a fleshly covenant with a female to whom he had not thought of aspiring,—a languishing, deferential regard. Had he been less enamoured of her charms, the remote consequences of his employment might have been averted. But unluckily the cow interested him enough to inherit for her offspring a participation in his constitutional infirmity,—and this disposition

predominating in the heifer, when, in due time, she was presented to the bull, gave promise of that which was realized in the next generation—a “spawny” and “well-timbered” calf.

Another, and by far the most prolific source of female ascendancy in the propagation of our species, since it applies to individuals of every temperament and condition in society, is to be found in the pitiful motives by which too many are influenced in cultivating a matrimonial alliance. When in rural simplicity we lived, it was accounted a privilege by man to labour for the support of a virtuous woman : but modern refinement as it is called, has effected a singular change in the feelings and disposition of my countrymen—so much so, that one might almost venture to offer a reward for the discovery of a young gentleman, whose sensibility is sufficiently blunted to admit of his smoking cigars, and drinking brandy and water, that does not think he is entitled to a maintenance at the hands of that lady on whom he shall condescend to bestow himself in marriage. And being free to speculate on this principle, attachments are feigned, affections won, promises broken, and hopes blighted, till at length the day of retribution comes, and when the perpetrator of such outrage thinks to participate largely in the

enjoyment of connubial sweets, he learns that the happiness of his fair elect has been compromised—and that

“ Life hath no more to bring
To her but mockeries of the past alone.”

Yet having sealed each other's destiny on terms irrevocably secure, all other considerations are usually suffered to merge in the one absorbing question—by what means a creditable relationship to the world is best to be maintained. The engagement, whatever it be, soon diverts the mind of him on whom its fulfilment principally devolves, from contemplations of a domestic and painful character. But neither time, nor changing circumstances, can dissever the association by which his wife is kept intralled in the interest of another. Though “ absent in the flesh,” remembrance will, in wanton mood, restore the lost embrace; and instead of yielding to the requirements of her husband in a spirit of pure and unmingled regard for his person, she assumes an air of abstract voluptuousness; and, if she bear children, stamps upon them her own individual impress, leaving him to whom they are in some measure indebted for existence, to confer, by way of supplement, just so much of his own peculiar habits and liabili-

ties as shall correspond to the amount of affection entertained for her at the instant of copulation.

Nor is this evil in a trifling degree aggravated, by the gregarious character necessarily imposed on the growing population of the country. Females inherit a greater abundance of that animal constituent (fat) whose chemical base is intimately allied to the smoke we disengage in the burning of coal than do men; and by the same law which enables pigs to thrust their heads into straw, and breathe the carbon thrown off from their own lungs, in the process of respiration, and get the fatter for it, are they enabled to bear a residence in a crowded city, with less personal suffering than is sustained by ourselves. This fact will partly account for the numerical preponderance of females over males in densely peopled districts. But a further explanation is to be arrived at by reference to the general habits of men in these localities, as affecting their private correspondence with the opposite sex. Contrary to the usages of rural society, the inhabitants of large towns are required, for the most part, to conduct their business in ill-ventilated, unhealthy apartments, and at the same time to bring into exercise a considerable share of intellectual acuteness. A depressing effect, proportionable to the extent to which the consti-

tution is thus taxed, necessarily follows; and to meet such exigency, recourse is had to stimulating fluids, and artificial treatment, of whatever kind, promises to recruit the declining strength. Hence a state of nervous excitement, to which the animal system holds *no just relation*, is being almost perpetually maintained, and which discovers itself, most of all, in impotent attempts to gratify a fleshly inclination. Where the primary cause of mischief alone prevails, as the conducting a mercantile or other active employment which shall involve incessant bustle and anxiety, and that too, under circumstances of atmospheric noisomeness, the consequences are felt, though in a less humiliating degree, in a reproductive effort. An irritability disproportioned to physical aptitude commonly incites such men to sexual negotiations which, if not inefficiently performed, require to be aided by all the artifices that a voluptuous imagination can suggest. And in resorting to the use of pitiful expedients, I need hardly remark that, of a verity, they resign all pretensions to manliness in the sight of those on whom their caresses are lavished. Women can only be charmed by men, so long as the latter preserve the *dignity* of their sex: when they cease to do that, as in the instance of the emasculated subjects in question, they are permitted to retain the privilege of copulation, as

it were, by sufferance, and the female chiefly subscribes to the establishment of the foetal character. This alternative realizes a majority of females in the issue ; and it becomes a matter of consideration with senators and divines, whether the returns of the late census, which develope a fearful increase of females over males, is not to be regarded as an indication of decline in the moral and physical constitution of Englishmen.

In those counties which include large manufacturing towns and cities, as Middlesex, Lancaster, Somerset, Gloucester, Surrey, Warwick, etc., where a corrupt atmosphere and dissipation ravage the male classes, a vast preponderance of females is discovered. On the other hand, the counties of Derby, Essex, Hereford, Salop, Westmorland, Wiltshire, etc., which embrace smaller towns, and whose male population are required to work too laboriously for bread to admit the practicability of excesses, the masculine character is better sustained, and we have, consequently, a bare majority of females : whilst Lincoln, Monmouth, Rutland, and Stafford, whose male population are more generally distinguished for hardiness, exhibit a balance in favour of that gender. I am aware that it may be contended that this showing only supports the position with which I started—that women bear a confined unhealthy

atmosphere better than men—a fact which, when taken in connection with their more temperate habits, would make it appear that a want of correspondence in numbers is simply referable to longer-livedness on their part. But whatever weight may be attached to this argument, I am convinced that where sensitiveness (which may be either hereditary or acquired, and in the latter sense it is pretty sure to be found as the concomitant of physical prostration) exceeds, whether in man or brutes, that of the female to which they are applied, a preponderance of female offspring is the result. My authority for adopting this opinion is strengthened, in no inconsiderable degree, by collateral evidence. The first-born of parents, in a conjugal state, is most commonly a girl, resembling, in its lineaments and general contour, the person of its mother, or some one to whom she is closely allied in blood. Now, it is well known to those who are conversant with human actions, and the feelings by which they are governed, that, as a rule, a man entertains a more cordial regard for the object of his choice, at the period of marriage, than she does for him. Having exercised his virile faculty already, he can anticipate the pleasure in reserve for him; but she, on whom the modesty of her sex has imposed restraint, can

form, as yet, no definite idea of the sensations experienced in coition. Unless she be one whom no man of cultivated taste would select, timidity will predominate over every other passion ; and for some time after their intercourse shall have begun, the enjoyment will be confined almost exclusively to himself. When the customs of a married life shall have made her somewhat *familiar* with indulgence, she will fear to betray emotion, lest suspicion of native indelicacy should arise in the mind of her husband ; and if, whilst studiously observing a selfish gratification (for I know not how otherwise to designate it), and before the glow of conjugal tenderness shall have declined in the husband, impregnation supervene, the child will, most likely, be feminine, and though partaking of the external characteristics I have mentioned, it will be strongly imbued with the spirit and hereditary liabilities of its father. The first ebullition of passionate love over, each party takes on the manner I have endeavoured to reconcile with the several forms of individual feeling and habit.

It is sometimes remarked, though I know not exactly on what data, that a healthy pair who should choose the city of London as a place of permanent abode, and there engage in the work

of procreation, with an understanding that their children should comply with similar terms, would be unrepresented in blood, after two or three generations. I can readily believe that this would commonly happen; for admitting the theory I hold to be correct, that, in such locality, the mother do, for the most part, command the physical character, with the certainty of a vitiating influence from the father—this influence, consisting, mainly, of his nervous faculty, would be inadequate to the preservation of its associate clay, and premature death would occur to the issue: or, in the event of longer life, hereditary decline would extinguish the family after the lapse of a few more years.

Oft as precedence is taken of the husband, under circumstances to which I have just referred, it is no less true that to him is frequently conceded the exercise of his just prerogative. We then witness in the offspring what may be paralleled on most badly conducted farms, a delicacy of frame that threatens disqualification for the purpose to which it is to be applied. Nor is it material whether the father present, in his person, a spare form, as induced by anxiety and other debilitating causes,—or the bloatedness of intemperance,—if his irritability incite him to outrage physical capa-

city, the seminal fluid will be emitted before it shall have received animal maturity, and the product will inherit a worthlessness of figure, with such modification of the sentient principle as the female parent shall have been able to impart. And thus is it that the conceit of little, ill-contrived, waspish, subjects is to be explained. Here I may prepare to encounter some demur from all rigid sticklers for reliance on the old doctrine that "like will beget like;" but, with a promise that the argument shall be resumed hereafter, I conjure them to look at the progeny of the lustiest innkeepers they can find, and then say with how much truth their favourite dogma unconditionally applies. I should have little difficulty in furnishing a volume of practical refutation.

For corroborative evidence of the fact that nervous irritability must not predominate, in excess, over the animal system, for whose government it is intended, or a lean spare issue will be the consequence, I refer to the ordinary class of males in the possession of British farmers. In them a contracted chest forbids the requisite purification of the blood, whilst circulating through the lungs; and it is returned again to other structures, in combination with more or less of that deadening property which it is the object of Nature to dis-

engage in the act of breathing. This being the case, a train of phenomena discoverable in all animals during sleep, when respiration is being slowly conducted, almost uniformly prevails; *i. e.* the secretions participate in the unhealthy character of the blood, from which they are eliminated, and are with so much difficulty sustained, that the standard of health may be said never to be arrived at. Hence, if undisturbed by exciting causes, such animals appear languid and drooping; but if associated with females of their own species, they are constantly being prompted to attempt what a defective constitution can ill afford to perform. One of the best schools for verifying this remark is a park or other inclosure, appropriated to the reception of store cattle, amongst which a few bulls are turned. Lord Rancliffe's seat at Bunny affords a convenient illustration. There have I often seen during the months of summer, two flat-sided, worthless, bulls, each with the penis protruding, for hours together, in pursuit of females, till the mechanical irritation occasioned by the presence of flies, and fruitless efforts to copulate, has reduced them to a condition alike disgusting and pitiful to contemplate. To say nothing of the waste of body incurred through want of full regular meals, rest, and deliberate

rumination, the vital principle is so fast consumed, in such an instance, by indulgence in physical love, that the general system, though greatly attenuated, and requiring, therefore, a correspondingly diminished succour, fails to enjoy its rightful superintendence, and the seminal fluid, at best, is endowed with a bare reproductive property.* My personal acquaintance with many who have grazed sturks in Bunny park, has given me an opportunity of noticing the shape and quality of stock, begot-

* To those who are unaccustomed to reflect on the causes affecting animal existence, this explanation may be rendered more intelligible by remarking that whatever engrosses the mind, in any of the endless modes in which it is exercised, to a vast extent, deprives the body, in a corresponding ratio, of its energies. Hence are they who habitually "look on a woman to lust after her," though evading the sin of practical adultery, exposed, in common with poets, philosophers, and scholars, to premature infirmity and decay. Hysterical, and even yet more formidable, nervous affections, frequently owe their rise to libidinous associations of thought, in persons of both sexes, where no actual vice stains the character. And of course the more suddenly and violently these operations of the mind are called up, the more disastrous are the results: thus excessive emotion, whether arising from joy, grief, or dread, induces immediate weakness, and has been known, in people of very excitable disposition, instantaneously to absorb, as does electricity (lightning), so much nervous power, as to leave the heart unprovided with a stimulus to contraction—in popular language, to drive the life out. When nervous efforts, to which an individual is unadapted, are indulged consentaneously with physical exercise, as in coition, it occasionally happens that paralysis, or apoplexy, immediately supervenes on emission. I have known several such cases soon after the parties have retired to rest. Death, under like circumstances, has sometimes occurred to the buck rabbit, the stag, and other animals of highly salacious character. Mr. Wilkinson, of Lenton, related to me an instance in a stallion a short time since.

ten of his Lordship's bulls : worse it would be difficult to find within the range of pretended cultivation.

The parks of our nobility not unfrequently contribute another example of the ill effects of extreme nervous irritability, in the degeneracy of hares. When allowed to multiply within prescribed grounds till each other's privileges are invaded, the bucks are kept in such a constant state of fretfulness as to tell very prejudicially on their young. It is not, therefore, when hares fail to reach eight or nine pounds in weight, that the land on which they are bred is insufficient to rear them, but that the irritability of the male class is out of proportion to their animal developement.

A still more satisfactory illustration is to be found amongst the poultry of our farm yards. When, in the early part of spring, the male fowl blooms with freshness and beauty—dropping his wing, and prating to his little auditory all the day long,—inviting them, ever and anon, to some newly discovered feast—then asserting with “shrill clarion” the indisputableness of his dominion—the nervous and animal powers are blended in harmonious conjunction. Chickens obtained from him under such advantages, burst from their shells in happy chirping mood ; and though in the

variable month of April this occur, they proceed to maturity with unabating vigour. In May his flesh is gone: still does he tread the hens, but with what less effect the following chicks attest. Some, probably, will not survive the process of incubation; and those which do will be feeble and unthrifty—uttering oft a plaintive tone, and stepping with awkward gait, till released, by accident, from trouble, or, in a few months after, by the design of their owner. Common prejudice ascribes this defect in later hatches, to an abridgment of their summer; but having bred an immense number of fowls, and marked throughout successive broods, a correspondence of the chicks, at birth, with the gradual decline of the male bird, I am able to speak with confidence on the subject.

Perhaps one of the finest illustrations of the theory I am advocating, is that which the English race horse affords. His nervous vigour so far exceeds the amount required to keep in healthful exercise the living body, that without the least detriment to the natural functions, he can afford to expend a vast superfluity in running. This would, *a priori*, warrant an assumption that he would beget a proportionably vigorous offspring. And so he does, in a nervous sense: but his figure

by no means answers to that which we require in *an animal intended for human sustenance*. Even muscularity, which constitutes his proudest feature, is, in a majority of instances, mainly acquired by the training to which he is subjected. The chest is not large enough to admit of his being *generally and plentifully covered with flesh*. To correct this fault it is necessary to moderate his irritability, which would be best done by imposing a little higher condition, together with corresponding, but not *distressing* labour, on such as are applied to the purposes of breeding. Instead of the restless colt which now, too often, appears with a loin like that of a donkey, we should have a product after the form of Mr. Rounthwaite's Governess,* Mr. Batson's Plenipotentiary, and

* I have often desired to learn what character Mr. Rounthwaite's Governess sustained, in the capacity of brood mare. I am no sportsman, as every one will believe when I say that I never caught a fish, shot a bird or other animal, or bet a shilling on a coming event. But I well remember witnessing what I considered to be an extraordinary performance on the part of this mare at the Nottingham meeting of 1826. She first ran for the Macaroni stakes, two miles and a half, carrying 11 st. 13 lb., against Mr. Charlton's brown colt Bestwood, and won easily. In half an hour afterwards, she contended against Mr. Platel's ch. f. Conviction, and Mr. Trench's b. g., by Ambo, for the King's plate, then a cruel race of four miles—heats, carrying 11 st. 7 lb., and although the weather was excessively hot (Aug. 3), she seemed, by no means, distressed, after winning the first and second heats. Her custom, it would appear, was to take the lead and keep it; for she never suffered her competitors to approach her—and I could not discover that her rider inflicted punishment in any form.

Mr. Houldsworth's Vanish; and all that would be demanded of the trainer, to preserve their adaptation to the course, would be to enforce exercise in proportion to the activity with which the purposes of digestion should be answered.

Similar treatment would correct the form, and, by lessening irritability, render more tractable our Alderney cattle. Their fretfulness was originally induced by the impoverished condition in which they are kept upon the islands, whence they are imported, and it has long since become inveterate: so that when promoted to the generous fare of our best rural establishments, they are found difficult of management. All who are intrusted with the care of Alderney bulls, concur in their report, that after the first six or eight months of the animal's life shall have passed away, an irritability supervenes, for which no remedy can be found. His Grace the Duke of Portland has long been in the habit of cultivating this variety; and when inspecting his herd, at Welbeck, a few years ago, I was assured by the

She proceeded from Nottingham to York, where, in eight days after her former achievements, she ran for the King's plate, four miles, heats—beating easily Mr. Haworth's gr. m. by Comus, out of Flora, and Lord Kelburne's eh. f. Purity, by Octavian. She combined nervous and physical requisites, in greater perfection than any other mare I have seen.

bailiff in attendance, that he had never known a quiet bull. On looking at two, over a low door, which I was pleased to find a sufficient barrier to more intimate communication, my ears were stunned with the bellowing they set up. However desirable it may seem to bring them into subjection, a serious obstacle, I fear, applies to any attempt to improve their temper by augmenting the bulk of their carcase—since every step we should take in the attainment of that object, would be one lost to the interests of the dairy.

Having said thus much on the results of reproductive intercourse, where nervous irritability transcends physical aptitude, I will hasten to a consideration of the subject, as it occurs, where an opposite predominance obtains.

That a contrast is to be found, amongst members of our own species, no less remarkable than in the instance afforded by the blood-horse and one of coarser variety, will be admitted by all who observe the manners of a well-bred gentleman, as distinguished from those of unpretending simplicity. And without affecting to deny the influence of education, in exalting the character, it is contended that no effort of art could advance to equal distinction, individuals selected from each of the two circles. An absorption of the best

faculties in manual labour, leaves those who are doomed to live by such exercise, in too prostrate a condition, to allow of their participating in the common gaieties of life, or the pleasure of venery, under circumstances however inviting, with that zest which is characteristic of extreme cultivation. The entire animal functions may be preserved in their native integrity, and furnish indications of health which they who "sit in high places" might envy; but after all we recognize, in this form of existence, an insusceptibility to impressions that would hardly seem to comport with beings who are destined, hereafter, to take on the intelligence of angels. One unvarying round of daily toil, alternating only with the whisperings of instinct, marks their career, and reduces them, on each returning eve, to the condition portrayed by Gray in his inimitable elegy :

The ploughman homeward *plods his weary way.*

Copulation, on the part of such men, is conducted with little more than regard to mechanical usage—so that for want of the requisite incitement to commerce, the semen, though healthy in character, fails to communicate that powerfully vital impulse which is inherited in the event of a rapturous embrace. The germ takes on a reproductive

action, and provided that the mother's condition be favourable to its developement, a bulky offspring is eventually produced; but all the processes of foetal growth betray an economy of purpose that can only be reconciled with deficiency of momentum in the first instance. Bone, for example, which is the meanest of all animal constituents, is largely bestowed, and involves its possessor, in the absence of due nervous activity, in that unseemliness of gait, for which people in the lower ranks of life are remarkably conspicuous.*

Such also may be said of the old-fashioned breed of cart-horses; but were they, or the men who drive them, promoted from the severer forms of labour, that hold the best faculties in bondage, to comparatively light, exhilarating, duties, their descendants would present, after the lapse of a few generations, both nervous and physical attributes but distantly resembling their own.

It cannot have escaped the notice of practical men that, though originating in a cause remote

* The force with which this rationale applies to a race of men, said, by Mr. O'Connell, to be the "finest peasantry in the world," will be seen on glancing, for a moment, at the moral and physical condition of the Irish labourer. Subdued in spirit by servitude, low diet, and priestly domination, he never, but when excited by whiskey, or its equivalent in some form, attains to that elasticity of limb which bespeaks *a capacity for pleasure*: hence the rudeness of his structure, as exemplified particularly in respect of bone.

from that of hard labour, bulls and other male animals, whose form and quality it is desirable to perpetuate, are occasionally to be met with, either wholly devoid of sexual appetency, or partaking of the faculty in so trifling a degree, as to be of little worth to their owners. The cause is most commonly referable to over-feeding of the parent stock. In them, as in all animals that enjoy not a great amount of nervous irritability, there is an obvious tendency to fatten: but rarely do they carry much flesh. Independently of their inefficiency as stock-getters, they, and their posterity, are particularly liable to disease;* for that *modicum* of vital principle, which scarcely allows

* It is here worthy of remark, how greatly an adherence to general principles will serve us, in the investigation of science. The nervous lassitude of our rural population, embracing as well the industrious farmer as his servant, is a subject abounding with interest, alike to the physician and the physiologist: for having to contend with the vicissitudes of climate, with the constant demand for concessions on the part of decaying manufactures, and with those direct emissaries of the devil, who deal out destruction by fire, such individuals are peculiarly liable to some distressing form of mental association, in which *nervousness*, according to the popular acceptation of the term, consists. Thus farmers are observed to be habitually croaking: it is either too hot or too cold, too wet or too dry, for their operations to be advantageously conducted; and were it not for the salutary influence of pure air and exercise, a vast majority of this useful class of men would be thoroughly hypochondriacal. And so are the dispensations of this life equalized: every condition, along with pleasure, engenders corroding pain; and that which I sometimes think would make me the happiest man in the world, might worry me with its endless cares.

the expenditure required, to carry out the scheme of reproduction, soon fails to preserve its own system in health, under the assaults to which it is necessarily exposed. A red bull of this class, bred by Mr. Whittaker, I believe, and sold at a high price to the Marquis of Exeter, subsequently fell into the hands of Mr. Walker, of Eastwood. He was always more intent on filling his belly than on answering to the invitation of cows: an hour would be sometimes spent in coaxing him to his work; and not unfrequently was he led away, unable to comply with the demand upon his services. His brisket, which was very depending, was alleged by the herdsman, in the simplicity of his heart, to incur so much difficulty in being carried over a cow's back, as to discourage him in the attempt. He never got a truly good calf, whilst in Mr. Walker's possession; and at length taking on some ailment that rendered him worthless in every capacity, he was sold, for a few pounds, to one of the numerous candidates for such a commodity, with which a town like Nottingham always abounds.

A friend of mine bought an in-calf heifer at Mr. Maynard's sale, which, in due time, gave birth to a bull calf, from whose services he expected to derive much profit. I was not so san-

guine about the issue—for his dam, though of unexceptionable quality, betrayed a slight disposition to a defect, more frequently seen in pigs and tame rabbits, than in any other class of domestic animals, and which conveys to one's mind an impression, that a belt has encircled the chest, and impeded its growth, whilst all other parts of the body have been suffered to advance uninterruptedly.* When a few months old, the infirmity

* To explain the cause of this anomaly has puzzled me exceedingly. The fact that rest is essential to fattening, and that this deformity is found only in those animals which are greatly disposed to fatten, would make it appear that their ancestors have, whilst earning a reputation for obesity, indulged much in a love of quiescence—that the lungs not having, therefore, been so fully inflated, as in the case of more irritable subjects, their investing parietes have conformed only to the requirements exacted from them; at the same time that nature has enforced her demand, that, however unequally distributed, the customary weight of carcase should be attained to. In awhile the error has become inveterate; and though exercise may have been imposed on their posterity, with a view to its correction, at the usual period of invasion, a depression in the spine has been perceived, immediately behind the shoulders, which has daily appeared more palpable, till at last the body has seemed to be compounded of fore and hind parts that would have well corresponded, but for a thoracic constriction that has spoiled the effect. Every pig I have known to be the subject of such malformation, has been derived from the stock of some gentleman *who has long been reputed for the excellence of his breed*. From out many instances, I may name that of four uncut, well-bred, male pigs, lately bought by Mr. Edge, of Strelley, for the purpose of being employed as boars, but which were all proscribed on account of this fault.

I have thought it advisable to let the preceding note stand; but since writing it, I have devoted much time to the management of a litter of pigs, for the first three months of their life, with a view to

began to develope itself; and by such time as he had reached maturity, he was as misshapen a

ascertain, if possible, the immediate cause of the derangement in question. They were begotten of a thick-bodied, short-legged, muscular boar, whose sire was equally good, but in whose family, on the side of the female parent, there exists a predisposition to this evil—out of a sow of extraordinary worth, which I happened to find in the possession of a man who, being little aware of her intrinsic value, was readily prevailed upon to part with her. So profusely was she covered with bristles, that, but for her brightness of skin, and lightness of bone, she would have been accounted coarse. Her courage was such that, whilst in my hands, few men dared to approach her; and this property, associated as it was, with unusual capaciousness of chest, conferred upon her, *what it ever will*, a vast amount of flesh. Thus constituted, I had little hesitation in predicting that *she* would command the physical character of the offspring; and the anticipation was further justified by the circumstance of the boar, to which she was put, having had a greater number of female visitors, for some days previously, than was compatible with a maintenance of his native vigour. She produced thirteen pigs, after her own fashion, one of which died at birth—and two she subsequently lay upon. For though an excellent nurse, she could not always dispose of herself to the advantage of her young—her weight being computed at twenty-five stones, independently of offal, at the time of farrowing. And it is worthy of mention that, of this weight, she lost not a stone in suckling ten pigs, with almost unexampled liberality, for the space of nine weeks—a circumstance I have never before known to occur, under any treatment, and which can only be explained, by reference to that uncompromising nervous faculty which, in addition to other services, promoted the most perfect digestion of all she ate. Her offspring, though individually small at birth, grew remarkably fast, as do generally those which are descended from vigorous parents; and at eight weeks old I could have sold them for a sovereign each. But I wished to learn whether I could superinduce, by errors in diet, such a disordered state of the general health, as should impair the integrity of their figure. They had hitherto been fed judiciously; but now their appetites were sated with redundant meals of rich and inappropriate food. The vital power was thus unfairly taxed; and soon, instead of warring with each other, as they had previously done, they slunk, with tumid bellies

brute as any I have seen in the possession of a distinguished breeder. Still was his quality good. The cellular membrane (which butchers inflate in the dead calf, to give a seeming plumpness to their veal, and which furnishes a nidus for the deposition of fat) was every where so abundant as to impart to the hand, when passed along his sides, a sensation like that which results from the handling of blubber. But that was nearly all,

and uplifted loins, into their bed. Uneasiness forbidding an extension of their limbs, a posture, common to the kangaroo and rabbit, was assumed: they crouched upon their haunches, and bewailed, sometimes, in piteous tones, their sad engorgement. A penalty attached to indigestion, in awhile, obtunded their desire for food; and whether standing at the trough, or, in disgust, retiring, there was manifested an instinctive effort to relax the coverings of the belly. Suspecting sub-acute or chronic inflammation of the viscera, I purposely killed one, when numerous contractions of the small, and some, too, of the large, intestines, consequent on inflammation, were uncoiled. The hardest of the litter suffered most from intestinal mischief: those which inclined to premature obesity, gave evidence of scrofula. The flesh they once enjoyed, became, in part, absorbed, and morbid fatness followed. Increasing pallor marked the surface; and that portion of the spine which, in rude health, extends a kindly arch along the chest, fell in, and necessarily restricted, in their play, the vital organs. Thus was a latent disposition to disease provoked to active exercise: for though in form and constitution, all the family submitted to experiment were good, no sooner were they, *by the means employed on many a farm, to expedite the growth of favourite animals*, reduced to that condition which belonged to the more delicate of their ancestors, than the disease with which such weakness was associated, supervened. I dare not, in a note, already much too long, pursue the subject further; and will, therefore, leave these observations to subserve, as best they may, the individual application of my readers.

beyond common integument, that covered his ribs ; whilst his flank was considered, as well by his owner as myself, to be the heaviest we had known—so partially was his carcase clothed. His habit accorded more nearly with that of a cow than of a bull : he had, therefore, not long fulfilled the obligations of his sex, before chronic visceral disease arose ; and the case proving hopeless, he was eventually destroyed.

These two examples of defective vigour I adduce, for the sake of showing the desirableness of keeping in mind the characteristic distinction of the sexes. *Extreme fatness belongs not properly to the masculine gender.* Men of that class are rarely endowed with the power to serve themselves in emergency,—nay, they are hardly fitted for the discharge of ordinary duties. If they attempt to prosecute an idea, oblivion soon its respite brings : under bodily labour they perspire and flag most pitifully ; and not unfrequently, whilst the consummation of venereal intercourse is yet in prospective, are they tranquilly absorbed in sleep. And the law which applies to them is of universal prevalence. A disposition to secrete fat rather than flesh, implies weakness, in the first instance : for the highest point to be gained in assimilation, particularly with herbivorous animals,

whose food contains none of that chemical constituent (nitrogen) with which muscle abounds, is the conversion of aliment into flesh ; and those which fall short of an ability to do that *well*, can make fat, in as much as a conspicuous chemical element of such product (carbon) exists abundantly in vegetable matter.* And when any animal, originally, somewhat faulty, becomes loaded with fat, the nervous system is exercised in so high a degree, to preserve vitality, that no extraneous effort can,

* The argument still further prosecuted, will show why horses are disposed to grow flesh, out of all proportion to fat, as compared with cattle, sheep, and pigs. Their irritability, exceeding that of the other animals I have named, prompts them to more vigorous exercise: *that* induces a full and perfect respiration, which, next to food, is the most valuable agent in the maintenance of irritability; since it not only liberates the carbon acquired by the blood, in its circulation throughout the system, and on the retention of which, stupor, and a corresponding tendency to fatness would be incurred; but it charges the blood with an atmospheric principle, consisting mainly of nitrogen (a property intimately identified with flesh), and fits it the better for depositing muscular corpuscles. In the present state of physiological science, the functions of respiration and cutaneous imbibition are but imperfectly understood; but of their availableness to the purpose of nutrition, we need require no better proof than is furnished in the uniformly rubicund, muscular, character of butchers. To birds we may also apply the same reasoning. Their mobility is owing to the excess in which nervous irritability prevails. They have a rapid circulation, and require a large pulmonary apparatus to purify the blood as it flows: hence they are provided with lungs capacious in comparison of the entire animal bulk; and so admirably does this conjoint dispensation serve the interest of the feathered tribes, that, whilst it affords them the utmost facilities for converting grain into flesh, in the ordinary process of digestion, when food is plentiful, it enables them to endure the multiplied ills inflicted by the prevalence of wintry storms.

in safety, be indulged. So surely as it is imposed, as in the harass to which human subjects of this class are occasionally subjected, paralysis, apoplexy, or some formidable disease, is the consequence. Thus do we learn *why* bulls of the character I have been describing, and even those of still greater robustness, when pampered, are slow to serve cows, and beget a feeble offspring at best. Unlike the bloated publican, who nerves himself to the task by artificial means, the bull has only his native energies, sustained as they are by natural food,* air, and exercise, to depend on :

* The subject of feeding is one of such vast importance to the farmer and breeder, that I cannot forbear to indulge once more in a few passing remarks. Food is the natural stimulus to the stomach, and is provided by Nature, not simply to gratify the cravings of hunger, but to repair, in the ultimate process of digestion, the waste to which animal bodies are subjected, in the maintenance of vitality. Instinctively do those classes which come not under the control of man, as does man himself where civilization is unknown, seek the kind of aliment to which they are expressly adapted by the Great Author of their being ; and no appropriation of them to domestic purposes can be profitably conducted which is not based on an attentive consideration of their constitutional peculiarities and habits. Thus cattle delight exceedingly to graze on old established pastures : and observation, directed to the fact, is not long in determining that the passion owes its rise to the healthful variety in which the natural grasses are intermingled in such fields, and to the consequent facility afforded for the gratification of individual taste. The calf, which has scarcely yet been practised in the art of assimilating vegetable matter, lingers awhile o'er each inviting plant, and crops the fairest ; whilst those of more ripened form tear off the rampant blade, and season the meal with spices drawn from aerid sources near. The most available of

a greater error can, therefore, scarcely be committed (and it is one into which men are very apt

these cordial resources are the several species of *ranunculus* (crow-foot, or butter-cup, vulgarly), and the leaves of the earth, or pig-nut (*bunium bulbocastanum*). In spring, when the grasses are extremely succulent, these aromatics possess a pungency little short of the mustard of commerce; but as they advance to maturity, they lose this property, and, by drying, it is entirely dissipated. The design to be fulfilled in these mutations is clearly discoverable, and is worthy alone of Him whose are "the cattle on a thousand hills." The tendency of succulent vegetables, that partake not of an aromatic principle, to fermentation, when exposed to a heat like that which they encounter in the living stomach, is so great, that, before the work of rumination can be conducted, there is an evolution of gas which defies its further progress. Stimulants possess not only the power to suspend fermentation for some time, but to quicken the stomach in the discharge of its common duty. And of this herbivorous animals are so well aware, that they will consume just so much crow-foot as is necessary to obtain for them an efficient digestion. They commonly eat most before retiring to rest at night, and, as if to throw off the lassitude engendered by repose, when rising to renew the task of providing for the day. To me it has often afforded interest, to watch their operations at such times. If a scarcity of the plant occur where a beast is feeding, she soon repairs to another spot; and if she happen to seize more than is wanted to impart the required flavour, by a dexterous manœuvre she conducts that which is dispensable to an angle of the mouth, and thence lets it fall. As vegetation ripens, its watery particles give place to fibrous matter: the probability of fermentation, therefore, is diminished; and, of course, less condiment is needed for protection. Hence the several families of the *ranunculus* are losing their virulence at that period; and by such time as grass has been converted into hay, they have taken on the character of bland, nutritive, products, that may be eaten without intermixture with other herbage. We learn, then, in the school of Nature, that, in providing those substitutes for the natural grasses, which improved husbandry enjoins, as well with a view to the interest of the soil, as to that of the stock which subsist thereon, we ought to sow conjointly with clover, dills, &c., the seed of crow-foot, or of some plant equally stimulating. For want of this precaution, the effects of young clover on cattle are often

to fall), than to select a male, because he has a thin, soft, skin, adorned with fine, silk-like hair,

very distressing, though not more so than would result from the use of spring grass, without the generous intervention I have alluded to. Unfortunately, the mischief occasioned by a liberal employment of insipid, juicy, vegetables is not confined to the stomach and its assistant viscera: the nervous system, and, consequently, the entire animal economy, sustains a shock, and that to so great an extent, that it is no uncommon occurrence to find originally vigorous males emaculated by the debilitating action of such food; and, as though in anticipation of injury, I have seen, on one farm, five bulls stand empty-bellied, at the close of day, having each a manger well furnished with clover, on being denied any longer a feast of cut grass. An apology for the absence of aroma, in the substance of turnips, is found in the biting qualities of their rind; so that an inflation of the rumen, in a beast, otherwise healthy, that is being fed upon turnips, is seldom to be heard of; whilst those to which a daily allowance of potatoes is awarded, are commonly made sufferers from that cause. Twice has this disaster befallen a cow of my own, from the employment of potatoes, beyond the extent to which they had been prescribed; and once I nearly lost a valuable calf, at six months old, by giving it about a quartern measure full, with a view to their aperient operation on the bowels. Flatulent colic ensued, which was with difficulty relieved by aromatics, anodynes, and a temporary clothing of flannel.

Unless they be sparingly administered, potatoes, when even boiled, will purge young pigs excessively; and may do more harm, by that means, in a few hours, than well advised treatment can atone for, in as many days. Perhaps the best mode of obviating their laxative tendency, when given to pigs in a cooked form, is to combine them, as custom sanctions, with some warm farinaceous matter, derived from grain, as barley flour, with the addition of as much salt as is required to impart an agreeable flavour. Without some corrective, the propriety of lavishing potatoes on pigs may be very gravely questioned. They are not a root on which these animals subsist, in a state of native independency; nor have they the properties in common with those vegetables for which pigs have the greatest relish, as earth-nuts, chestnuts, acorns, &c. These products have all a sweetish, sub-acrid taste, and possess more or less astringency—a circumstance admirably adapting them to the constitutional demands of the animal, which are at

and is well provided with fat upon his hips and rump. For since it is undeniable that the basis of

variance with relaxants generally. I have long suspected the sow's milk to be slightly astringent: it conveys such impression to my own taste; and the remarkably constipated condition of the healthiest sucking pigs, would still further appear to warrant the supposition. My argument that potatoes, in the abstract, are not well suited to the temperament of pigs, rests not merely on the little affinity they bear to those articles which the animal prefers to live on: it gains considerable strength from the manner in which raw, unwashed, potatoes are treated by pigs. If they be thrown down to one accustomed to such food, and their size admit of being received into the mouth entire, he takes up each in turn, and rolls it lightly over his tongue, by which means any little cakes of dirt that may be found adhering, are dislodged and ejected by the mouth; at the same time that this action excites an immediate and profuse flow of saliva, with which the chief of the remaining dirt is literally washed off. The potatoe is then consigned to the grinders; and much of its juice having been first allowed to escape, the remainder is swallowed along with the body of the fruit. Now why this instinctive elaboration, before committing to the stomach, what, as an article of food, is almost universally thought to be applicable to him? Not the cleanly habits of the animal, which forbid an intermixture of siliceous matter with his ingesta. The presence of grit would seem to be essential to a healthy action of his stomach and bowels; and it is often eagerly sought, in the form of coal, cinders, sand-stone, &c.: but the combined influence of a cold, watery, vapid root, and its encircling earth, is more than he can profitably entertain; and with a tact, therefore, which would appear to denote a glimmering of reason, does he reject all that is truly superfluous. This seeming distaste for unsavory food, which is borne out by the greater avidity with which a pig will eat apples, lettuce, and the pods of green peas than those of broad, and French, beans, or even cabbage, should suggest to our minds, particularly when taken in connection with the impermeable character of its skin, the impolicy of administering its food in a very diluted form. But I must conclude this article: already has the interest attached to the subject led me to trespass on the patience of my readers further than I had contemplated in the outset; and enough has surely been said to prove that, if we are to excel in the management of inferior animals, we must closely study the constitutional peculiarities and habits of those we engage to treat.

animal usefulness consists in a possession of due nervous irritability, the breeder's interest obviously lies in the choice of such as combine this attribute with a beautiful arrangement of bodily structure ; and not once, out of twenty instances, will he find the features I have recently enumerated, in connection with extreme muscularity and good courage.

The inertness which I have shown to be constitutional in males, whose disposition to obesity is in excess, supervenes on even the most vigorous, if applied to the purposes of procreation, beyond the period allotted by Nature, for an efficient discharge of that function. To compute, by time, when males of any species should be withdrawn from service, would be impossible ; since those which are entitled to rank in the first class, will differ materially in their powers of endurance, under like treatment. And when to this original difference, is added that which individual management involves, the difficulty of proscribing an animal, in justice, on the score of years, will be obvious enough. Indefinitely, it may be said that the close of usefulness in a good bull, ranges between the seventh and tenth years of his age,—and, in a boar, between the third and fifth. But

the only correct mode of settling the question, is by reference to the manner and appearance of the animal employed. If he be one of high, and just, pretensions—say, a bull, and have been suffered, as most assuredly he ought, from his birth upwards, to carry as much condition as is compatible with activity and cheerfulness, he will be found about the fourth or fifth year, probably sooner, disposed to fatten more than formerly: where little beyond flesh has been felt aforetime, fat is now discoverable. In those of very high courage, that are somewhat difficult of control, this period will be protracted yet further; and about the sixth or seventh year, a degree of ripeness, unobserved before, will arise. It now behoves his owner, provided that he still wish to retain him for procreation, to notice in what mood he entertains the other sex. If he look with comparative indifference on a cow in season, and refuse, for some time, to answer the call of his attendant, the vital principle is being consumed as fast as it is engendered, in the maintenance of his carcase, and none can be expended in propagation, without endangering the issue.

The case is not unfrequently paralleled in those of our own species,—as when a man of good con-

stitution, at fifty, grows lazy and fat. The intelligence he once possessed begins to desert him; and all other faculties, dependent on nervous irritability, in like manner become blunted—until his energies proving insufficient to command a healthful state of mere animal existence, visceral disease makes inroads on his frame, or one of the more frightful forms of nervous affliction removes him from the living. And instances are not wanting in the class of animals to which my observations more immediately refer, to make the parallel complete. The celebrated bull Shakspeare, of the long horns, is reported to have fallen a prey to paralysis, when ten years old; and Earl Spencer's bull Firby, rendered deservedly famous by the notice he has received in the Society's popular treatise on Cattle, was the subject of incipient paralysis, at about the same age, when I saw him at Wiseton a few years ago.

To guard against a seizure of this kind, in the subject before us, the most valuable agents in the preservation of nervous irritability should be had recourse to. Daily exercise, proportioned to his strength, away from home, so that his attention may be directed to fresh objects, should be enforced; and a diet, somewhat more stimulating, but less nutritive, than that to which he has

been accustomed, should be chosen. If, under such treatment, his bowels remain torpid, and his dung preserve an immoderate consistency, the proprietor may rest assured that his symptoms augur badly. He is yet too enervated to admit of being advantageously employed; and along with an occasional purgative, the best of which, in his case, is croton oil, bleeding may be instituted, provided that the jugular vein can be got at. Should these means succeed in restoring the tone of the system, he may be introduced afresh to cows, taking care to premise that they are shown to him in a situation remote from that in which his interviews have been previously conducted; so that, if possible, a new and more pleasurable train of association may be established. But should the lethargy continue, in spite of all efforts at redemption, it were better that he be consigned to the butcher, than that additional pains be taken to bolster up a declining constitution. For I care not what may be his appearance: he may look as he did when younger; yet will his stock inherit more bone than formerly, and be otherwise devoid of beauty. In the season of earlier growth, when the work of animal deposition, absorption, and rearrangement is fast progressing, the institution of a generative faculty is withheld: but the model-

ling and perfecting of the system having been, for the most part, accomplished, the flame of venereal passion begins, and continues to burn with ardour proportioned to individual temperament, and the force of exciting causes, till fleshly incentives lose their charm, and infirmities announce that the proudest characteristic of the sex is fading. Indeed all nature attests that to life belongs a constant succession of changes, involving either physical developement or decline; and it is unreasonable to expect from an individual, when the tide of vigour is receding, those services which were once efficiently bestowed.

I know, from extensive dealings with agriculturists, that, on this point, I shall be found to differ from many supposed authorities. It will be expected, therefore, that I shall support my opinion with proof. I will do so. A very distinguished breeder of my acquaintance purchased at Mr. Mason's sale, a three-year-old roan bull, of singularly fortunate shape and quality, which, on account of his rare merit as a stock-getter, he kept upon his farm six years.* When contem-

* I have here, unfortunately, to contend more with individual prejudice than with the difficulties attachable to my subject. If I publish the name of my friend, in connection with the following detail, I shall offend him: and whichever way I turn, an objection is

plating his destruction, I put to him a light-fleshed cow, of mild, languishing, countenance—just such a beast as might be expected to impose on the bull an ample share of generative responsibility. And that this was, indeed, her custom, is proved by the fact, that four calves which she bred, whilst in my possession, were all males, and partook mainly of the character of their sires. On the occasion I allude to, much difficulty was experienced in coaxing the old bull (for he was very heavy withal) to fulfil the office assigned to him. Eventually this was accomplished; and in 282 days the cow produced a big, clumsy, ill-shaped, bull calf. To rear him I knew would be to incur a very serious cost, in the heart of a manufacturing town, where all landed commodities fetch an exorbitant price. Besides, I had engaged, in addition to the first charge of two guineas for bulling, to pay five more, in the event of a male issue that should be appropriated to masculine

raised to the announcement of facts that can, by possibility, be construed to the disadvantage of those who are personally interested in them. It is this dread of fair discussion that has tended, more than any other cause, to check the diffusion of practical knowledge. I regret its prevalence; but having no intention to abuse the privileges I have long enjoyed on the farm of the gentleman in question, I must beg the reader's acceptance of this, and a few subsequent, illustrations, in the disguised form which I feel compelled reluctantly to adopt.

purposes. As experiment, however, was my object, I considered that the money I should thus lay out would be well applied, and undertook therefore, my task in good spirit. From the period of his birth (November) to the ensuing May, he was confined in a shed with his dam, and allowed, so soon as his wants impelled him, to take all the milk she secreted; and in the exercise of that function she had few rivals. They were then, for three months, both turned into a rich field of an acre and a half, where no intrusion on their retirement occurred, save that which arose from a morning and evening visit, paid to them by myself, with as much regularity as opportunity would allow. The calf was now weaned; and at the end of fifteen months, he was introduced to a few cows. Shortly afterwards I castrated him; and having grazed him during part of the following summer, in Wilford pasture (a piece of rich feeding land, provided with a stream of good water), along with eleven cows, I submitted him to slaughter.

It may excite surprise that I should have resorted to this alternative, instead of keeping him entire, or selling him in that state for the benefit of another, after incurring so much expense in the first instance. My reason for so doing was founded on a belief that he would be no valuable acquisition

to a purchaser, though preferable to scores I have seen in the hands of English farmers. I reared him not from any fanciful or misconceived notion of his importance, but because the contemplation of his figure and history tended to establish many views I had entertained on the subject of breeding. His faults, which were obvious at birth, "grew with his growth," and afforded a memorable proof, in addition to many others I could adduce, of the impracticability of maturing a good beast from an originally defective calf.* His issue, again, gave

* This observation applies no less to a calf of high-sounding pedigree than to one of professedly mean birth. Function is an inherent and essential attribute of structure; and, in health, one stands to the other, in the relation of effect to cause. A defective form, then, whether generally or locally considered, involves, in the abstract, a correspondingly defective action; and though that subtle agent which we recognize when speaking in terms of "nervous," or "vital influence," "spirit," "pluck," "mettle," &c., may serve to give efficiency to what would otherwise be reckoned wholly, or, in part, of little worth, it never can invest a faulty animal base with much flesh or fat, or correct errors arising from local imperfections of structure. Practised dealers, in conducting their purchases of stock, are always found to bear ample testimony to the truth of this remark; and to tell one of them, when offering a cow, or a horse, of contracted chest, for sale, that it will acquire robustness, on being introduced to "good keep;" or that a habit of "cutting," in the latter, has been contracted by bad shoeing, is to incur the certainty of being laughed at. *It is only when engaged in selling that he adopts those views.* The policy of such men affords a remarkable contrast with that of another class, who, without any well-digested ideas of structure, deem every animal of great value that is reputed to be of good descent. I remember seeing a young bull in the possession of Mr. W——, of E——, in this county, when that gentleman was attempting, a few years since, to cultivate short-horned cattle, that was much admired by many; and

authority for much that has fallen from me in condemnation of bulls which, though once good,

being asked my opinion of his merit, I referred to his general want of room in the chest, as indicated in the precipitate descent of the ribs, and indented figure of the plates, which allowed the elbows to retire, and the shoulder points (humero-scapular articulation) correspondingly to protrude, in support of an intimation that he could never carry a great quantity of flesh, and could, therefore, contribute little to the reputation of a breeder. So soon as he could brave the shock inflicted by this unexpected announcement, the man in charge of him begged to submit that, though my theory might deservedly apply to cattle of meaner origin, it could have no weight in respect to the one in question, whose dam had been purchased at a very considerable sum, purely on account of her exemption from intermixture with base blood. Besides, added he, with the characteristic simplicity of inexperience, the imperfections to which you allude will be no longer discoverable, when the bull shall have attained mature growth. At present he is young, and, possibly, wanting in the girth; but see him again in a twelvemonth, when he shall have had some good keep, and you will hardly know him. The practical authority will here discover that this poor fellow echoed the story told, in extenuation of a bad form, by every novice, whose observation has not taught him that a calf, at any period of its age, under a generous diet, presents an accurate miniature representation of the full-grown beast,—that the proportions manifested in early life advance pretty uniformly with each other throughout the successive stages of development; and that, consequently, what appears to be a trifling defect at first, assumes ultimately a much more objectionable character. The owner of the bull to which I have just adverted, refused to take 50 guineas for him, when a few weeks old, of a gentleman then about to engage in a like pursuit, though intrinsically worth no more than 7*l.* when I saw him at the age of six months. A ginger-coloured bull calf, about a fortnight old, without one good property, I remarked, at the same time, to be worthless, except for the amount of veal it might furnish, and advised its being set apart for that purpose. “Oh!” I was answered, “it would not do to dispose of the breed in that manner; in colour this calf resembled the famous bull ‘Hubback,’ and if well reared, he might possibly beget as good stock.” To all “pure blood” advocates I would say—“pedigree” deserves only to be regarded so long as the “unities” are well maintained.

shall have become venerable by time ; for they were all “weedy,” and had they been otherwise, they must have owed their merit, remotely, *to his sire*, since his dam was of mean extraction ; and every cow to which her son was put was equally so, being the property of poor milk-men of the town. Lastly, I would observe, that the sexual privation inflicted on this young bull, enabled me to determine *why* the operation should be performed before the generative faculty is attained to. When, afterwards, he was allowed to roam promiscuously with cows, his custom was to companion one awhile, and mourn with her, in silent converse, the ills that had been perpetrated on him.

Her sympathies enkindled did but serve
To swell his anguish ; for whilst favoured thus,
Associate joys would vividly reeur,
And, prompting weak and impotent desires,
Provoke the stern repulse—
Unless proud Nature should, in fitful mood,
Have fired the heart with keen erotic glow,—
As when the genial showers profusely fall,
And rise like incense o’er the fertile mead :
Then would his suit be rapturously embraced—
And if not unremittingly pursued,
Insatiate lust would goad him to the task,
Till forced into submission, or compelled
To seek repose beneath the distant shade
Of friendly hawthorn. Thither would he steal,
Preferring to beguile the tedious hours
In moody solitude, than stand the brunt

Of unrequited love. Constrained by want,
 At length to move abroad, his loitering step
 Marked first the bounding fence, on which he browsed:
 Then daring, softly, to approach the herd,
 He joined in their repast. Sometimes, at once,
 And less involving coyness of demean,
 Would friendship be restored. A common foe,
 Announced in latrant tone, or piercing dart
 Of swift-winged æstrus,* would soon reconcile

* Few engagements afford so much solid instruction as that which seeks to determine, by reference to the instinctive operations of animals, the purposes they are designed to answer in the boundless economy of Nature. Every class is appointed to the discharge of a specific function, or otherwise contributes, to the promotion of man's interest, without exception, even, to the countless tribes of insects, that load with atomic life the vernal air. Yet not unfrequently does it happen, as in the instance of the gad-fly (*æstrus bovis*), that complaint is made of those to which we are largely indebted. By such time as this little animal emerges from its chrysalis, in the form of a fly, the grasses have, for the most part, ripened, and the cattle thereon are thriving with a rapidity that endangers health. Their stomachs being quickly filled with available food, repose is sought: but now alights the female æstrus on the back of one, which throws the whole herd into confusion, and away they start in the vain hope of escape from their assailant. All this while does their troublesome visitor proceed from one beast to another, piercing them where best she can avoid the lashing of their tails, and depositing, in each puncture, the germ of a future insect: and thus is congestion obviated, which, in the most plethoric of these animals, would be pretty sure to supervene on habitual quietude. The season passes over; and the gad-fly, having executed its mission, dies on the field where, in transport, it has lived. Winter comes; and the risk of repletion having declined, "the lowing herd wind slowly o'er the lea," exposed, in no wise, to foreign aggression. But on the approach of spring, the embryon insects, which have hitherto been nurtured with little or no inconvenience, advance rapidly in growth, occasioning uneasiness, and affording indications of their seat in *noduli*, disposed along the sufferers' backs. Presently the cattle are turned to grass, when a vast access-

The angry pair (as will a neighbouring fire,
 That threatens to invade our peaceful home,
 Bring those in friendly contact who, for years,
 Have been estranged), and blend, in common cause,
 The startled herd, to fly, or to defend
 Themselves from harm. Or haply, whilst in dudgeon
 He remained, the season for refreshment
 Would arrive, when, following in the rear
 Of those whom Nature summoned to the feast,
 Might be seen, intent (as oft is man,
 In draughts less pure) on finding from all ills
 A sweet release. Another treaty formed

sion of nervous vigour propels the blood universally to the surface, and stimulates every organ to redundant secretion. In so far as the viscera are concerned, this additional labour is commonly well sustained. The part most endangered is the cellular, or sub-cutaneous tissue (on the comparative amount of which we determine the capacity of an animal for fattening), and for this reason: it is but scantily endowed with nervous sensibility; and, when urged, in common with other structures, to excessive action, the balance between secretion and absorption is soon lost, and an accumulation of serum follows. In other words, inflammation—precisely similar to that which we witness in lymphatic subjects of our own species, when addicted to irregularities, is the consequence. But now comes into view the remedy provided by nature in this case. The larvæ are all deriving support from the cellular tissue, independently of the irritation they individually establish; and by thus serving as *diverticula* for the exuberant animal juices, they preserve the subjects of local inconvenience from constitutional injury. A conviction of the benefit attached to this bountiful institution led men, no doubt, originally, to introduce a seton in the dew-lap, on turning out, to spring grass, cattle that were free from warbles; and the custom has been very judiciously perpetuated down to our own time. Through non-observance of it, I once lost an excellent calf, and should have lost also a cow, but for the timely employment of free incisions, after the manner advised by Mr. Lawrence, in erysipelas of the human subject. I would just add—it is on the same principle that medical men practise counter-irritation, in form of seton, issue, &c., both in a curative, and preventive, sense.

Was but the harbinger of future woe :
And thus one constant, ever varying, round
Of pain and pleasure, robbed him of the flesh
He once enjoyed, and made him barely meet
For human food.*

In a few days after the bull, whose history I have just given, had been conceived, a public sale of short-horns, the property of Major Bower, of Welham, in Yorkshire, took place. The circumstance of this gentleman being known to have started with cattle derived immediately from Charles Colling's stock, together with the extensive publicity given to the intended sale, secured an attendance of many distinguished breeders and admirers of short-horns. They had, however, the mortification to learn that the animals submitted to competition were, by no means, worthy of their predecessors, or of the representation made of them, by advertisement and circular. The

* An apology is, perhaps, due, for having related in verse what, some may think, would have been far better told in prose. I assure all who shall demur that, if I could have met their wishes, I should have been glad to do so. For two days I attempted a simple prosaic narrative, but always sunk beneath the subject ; and was at length compelled, in my desire to avoid vulgarity, to adopt a more lofty style. And now I am disposed to believe that several passages, involving extreme delicacy of sentiment, would have been more appropriately given in a like manner. The only objection I can discover to such a course is— that the work might have been rendered somewhat less generally intelligible than in its present form.

principal buyers consisted of gentlemen about to embark in the practice of breeding; amongst whom was one from the neighbourhood of Nottingham, who, having possessed himself of nine or ten cows and heifers, at prices, varying, I believe, from eleven to thirty guineas each, returned home with a determination to purchase the best short-horn bull he could procure. Regardless of age, he bought the animal to which my cow had just before been introduced—already slow to cover, as previously intimated; and now rendered still more inert by change of residence and custody. Occasionally it was found necessary to send for his former attendant, before a cow could be served; whereupon his proprietor resolved to reduce his weight, then amounting to 164 stones. This was accordingly done, to the extent of about 20 stones, without effecting any material change in the bull's disposition. Indeed the work of deterioration, which had been for some time past in progress, was thus well nigh consummated. He was no longer what he had been, either in physical bulk or in spirit; and though not absolutely "powerless his kind to gender," how was he to communicate to his posterity properties which, in himself, had fallen into decay? Animal bodies are all resolvable into elementary particles, whose indi-

vidual bulk preserve a just ratio to the texture they compose, and the magnitude of the system with which they are identified.* Thus, the ultimate corpuscles of muscular fibre (which consist of the red globules of the blood, under some slight modification) vary with the size and condition of the subject, and the application of the members to which they respectively contribute. They are bolder in the larger class of animals than in

* Throughout nature it is observable that the component particles of matter are minute and dense, in proportion to the scarcity with which they are dispensed—and *vice versa*. In so far as animal organization is concerned, such arrangement is productive of immeasurable advantages. The faculty of prehension, for instance, demands a lightness and mobility of the members exercised, along with a power of resistance equal to that employed in their direction. These requisites we enjoy in the construction of our hands and feet—associating as they do, by means of ligament, a numerous phalanx of small bones, to which are distributed, apparently delicate, but powerful, tendons, equivalent to the task imposed on them by the flexor and extensor muscles, whose interests they subserv. In the membranous expansion, moreover, by which the muscles are kept *in situ*, during their most vigorous contraction, the principle is exemplified; as also in the greater hardness of small, than of correspondingly large, bones. The skin enveloping the extremities of eattle is another illustration. It is thinner below the knee than on the neck—but is far less permeable to moisture; though yielding more readily to the knife, for the reason that moderately hard substances are more easily acted upon than are those of spongy character. In the vegetable kingdom the same law obtains. Trees that are of rapid growth, as willows and pines, are of looser texture than such as are slowly matured. The stunted hedgerow oak is harder than that which grows in fellowship with others. The mineral kingdom furnishes additional examples. Iron, which is plentifully discoverable, is more porous than silver, silver than gold, gold than platina.

smaller of the same species, as, by the same law, they are bolder in one part of an animal than in another. Hence the preference due to a Scottish bullock over our boasted short-horn, and to South-down mutton over that of Lincolnshire; as also to a sirloin of beef over the neck or shoulder of the same beast. And as by primitive constituents, so by ostensible products. The semen is a type of the entire system; and I doubt not, if that which was secreted by this bull had been subjected to microscopical investigation, both before and after his loss of flesh was sustained, it would have been found to differ considerably in character. And so exactly did the result of reproductive exercise comport with the description I am giving of his infirmity, that, though reputed, in his earlier days, to have begotten some of the finest stock in the kingdom, he did not get, when put to ordinary cows, one truly good calf, during the two years this gentleman kept him. The speculation failing, he was sold by auction, along with all that had descended from him, whilst on this estate, and shortly afterwards died.

Less fortunately for Mr. — than for the interest of science, his place was supplied by another bull (B*****), equally antiquated, and which, at no period of life, had possessed the constitution of

the former. He was hired for twelve months, at a considerable cost ; and as he was well known to many breeders of the North, and greatly approved by some, it may not be amiss to state, in this place, the ground of my objection to him. He was extravagantly large ; and, like most huge animals, wanted symmetry. His skin was soft and thin ; and his hair excessively fine and silky in appearance. Of cellular membrane he had a profusion ; but of flesh he had no more than was needed to conduct so large a frame through the mechanical duties attached to his position on the farm. Originally he had more : though I contend that his muscularity never could have entitled him to rank with those of the first class—his habit inclining rather to a secretion of fat than lean. The high price at which he was let, together with the sum for which he was sold, at the conclusion of his engagement with Mr. —, would, I am aware, hardly seem to justify the opinion I am giving. But such considerations weigh lightly with me, when opposed to the authority of physiological truth. There is too great a leaning on the part of breeders to animals in which fat superabounds ; and I have known them often to indulge their prejudice, at a greater outlay than has been commensurate with either their own or the public interest. Whether

the attenuated form in which this bull was imported to —— was the result of natural decline, or of human contrivance, I know not : but conscious of the disappointment that his introduction would occasion, I endeavoured, in so far as prudence would allow, to dissuade this gentleman from using him. My efforts, however, were unavailing : having engaged the animal's services, he determined on submitting them to trial ; and ill indeed did the experiment reward him. The vital principle was so sparingly bestowed, that few calves survived their birth many hours ; and those which lived yet longer, had little to recommend them to notice.* This last, and signal, failure induced Mr. —— to relinquish a pursuit, in which he had profitlessly embarked several thousand pounds. For it is worthy of remark that, during the few

* The reader will perceive how well this result justifies the caution given by Virgil in the following passage, which, though having immediate reference to the stallion, is no less applicable to the bull :

Frigidus in Venerem senior, frustra que laborem
Ingratum trahit : et, si quando ad prælia ventum est,
Ut quondam in stipulis magnus sine viribus ignis,
Incassum furit. *Georg.* iii. 97.

For when his blood no youthful spirits move,
He languishes and labours in his love.
And when the sprightly seed should swiftly come,
Dribbling he drudges, and defrauds the womb.
In vain he burns like hasty stubble fires ;
And in himself his former self requires. DRYDEN.

years he was thus unsuccessfully occupied, he made very extensive purchases of cows, at prices, varying from those at which he started to 220 guineas, each, some of which were put to this bull: but, as though by common consent, they imposed on him the entire procreative responsibility; and he discharged his function in the manner I have just set forth. Here, then, is the evidence on which I establish my objection to the use of bulls whose constitutional energies are on the wane.

I have intimated above, that extravagantly large animals are rarely symmetrical; and having previously maintained that functional integrity prevails only in a degree corresponding to that of structure, whether viewed in a general or local sense, it follows that very large males are not the best adapted to purposes of procreation. To prove it, I must invite attention to the fact, that the nervous principle which pervades and governs animal bodies, is active in proportion to the supply originally conferred, and the extent of exercise which it is called upon to endure. If, then, two bulls inherit, each, a like quantum of nervous vigour, and one attain to a much larger size than another, the larger will preserve an habitual sluggishness, and the smaller an habitual activity.

The superintending power which, in one instance, is barely sufficient to keep every faculty in health, is, in the other, more than enough for the accomplishment of the same end. By imposing on this subtle agent an additional burthen, as by fattening him, or exacting from him an unreasonable amount of labour, the spirit of the little bull may be reduced to the standard of its fellow. But under similar treatment, he will command a more healthful condition of body, and be better fitted to engage in extraneous efforts.* An unusually

* Thus is it that we account for the fact that a man, weighing 16 stones, however hardy he may be, rarely contends successfully in the prize-ring against one that is somewhat lighter,—that the heavy Lincolnshire dray-horse moves with more sluggishness than does the Suffolk punch,—that the ordinary roadster steps more slowly than the Welsh poney,—and that even a race horse of the largest class strides with less frequency than one of moderate size. There is so much more nervous energy required, to enable the larger animal to direct its extremities, under the mechanical disadvantages incurred,—so much more, again, needed, to qualify the heart for propelling its blood to the extreme surface, and to conduct, in due order, the entire economy, that, were it possible for such animal, under pressing necessity, to maintain the quick action of the smaller (their constitutional vigour being alike), the heart, or some important viscus, would lose its stimulus to exertion, and the sufferer, probably, fall dead in the struggle. The force of this construction will appear the more obvious after further illustration. I will suppose, therefore, a long, and a short-legged horse, of like spirit, and having, relatively, the same volume of chest, to be worked together. In performing his part, the long-legged animal will expend so much more vital principle than his companion, that, provided their labour be severe, he will scarcely be able to reserve enough, to command a healthful exercise of the natural functions. Under circumstances but little affecting the vigour

large bull, then, we commonly observe to fall short of the condition which even the figure of his trunk

of the short-legged horse, he will quite fail to do so. An urgent demand on his services will deprive the stomach, in common with other organs, of its tone; and, until the various causes which contribute to the invigoration of the system shall have engendered a fresh supply, he will refuse his food, as we ourselves are accustomed to do, when the physical powers have been taxed in too high a degree. In general he will eat more than his associate; for the greater "wear and tear" incurred by him, will demand of digestion a corresponding repair; but owing to nervous insufficiency on the part of the viscera concerned in this process, a considerable portion of his food will pass through the bowels in an unassimilated form. So that whilst imposing on his owner a greater expense than the short-legged horse, he will appear in much the worse condition. A few years ago, a gentleman of Nottingham gave 40*l.* for what he thought to be a promising two-year-old, half-bred, colt, which he kept unemployed till four years old; and finding him then to exceed sixteen hands, he deemed it advisable to take him to work. He now soon discovered his mistake. The horse could not travel five miles without fatigue, though consuming an almost incredible quantity of corn. He was therefore sent to livery for disposal; and none of "the trade" approving him, a purchaser was found at the sum of 16*l.* in the person of a bleacher, who employs him to draw a van in the neighbourhood. Experienced dealers are well aware of the danger of a half-bred hackney growing too big. "A nice horse *that* will make in a year or two," may sometimes be heard to proceed from one to another. "Aye,"—is not uncommonly the reply; "I should like him *if he does not grow into too much of a horse.*" There is a vast deal implied in that short colloquy: but I am again exceeding the bounds usually prescribed to an illustrative note. I may, however, be permitted to add that, if followed out in principle, the question I have ventured thus lightly to treat, would be found to involve many interesting considerations in relation to our own species. There are few localities inhabited by man, that do not furnish some pitiful instances of physical delicacy, as indicated in extravagant length and slenderness of limb. My attention was, in early life, greatly diverted from other and more appropriate studies, by a curious specimen that occurred in one of two brothers, who journeyed with me daily to school, about three miles distant from the

would seem to promise, for want of more nervous energy to sustain the system, under the physical

village in which we lived. He was a *hungry-looking*, long-jointed, lad, the very counterpart of "Noah Claypole." Nor did his *looks* deceive the most speculative observer; for he could eat as never lad did beside him. His mother was an indulgent creature: having provided a commodious receptacle for food, made after the fashion of a domestic clothes basket, but not quite so large, her next pleasure was to fill it, whensoever its interior bespoke a necessity for her doing so, which was once in twenty-four hours. The prevailing repast consisted of a "boiling" of potatoes, interspersed with fragments of bacon, which the youths preferred to convey by means of a stick, to which their basket, with its contents, was suspended. It was always matter of complaint with him whose consumption exceeded not that of other boys, that he should be compelled to carry half the provision; and he would endeavour, occasionally, to shove the basket handle beyond the notch which, by parental authority, had been indented on the middle of the rod. If foiled in the attempt, his next contrivance was to get in advance of the starveling, and importune him to come up with the load—a request which the latter always avowed the utmost willingness to comply with, on condition that he be first allowed the privilege of translating it to his own stomach. An insatiable appetite, however, belongs not to all of this class: and though bodily infirmity be their's, it is commonly atoned for by the success with which they prosecute intellectual labours. Engendered not intemperately—but when neither animal nor nervous faculties immoderately prevail, they inherit a disposition that fits them for calmly and patiently investigating whatever they undertake to acquire. In imagination they rarely shine; but for research, and legitimate induction, they are pre-eminently distinguished. Men, so constituted and exercised, look with comparative indifference on women. The tide of love, in them, flows not in impetuous streams: it faintly issues—and, in many a pair, blights the fond hope of marriage. To the same cause is the frequent extinction of the blood of men to be referred, whose nervous excitability far transcends that of the class to which I have just alluded. Their energies are wholly, or for the most part, absorbed by their favourite study; and they disregard the opposite sex entirely, or, at best, are able to infuse but a trifling amount of vigour into their offspring. Bacon, Locke, Newton, Pope, Swift, Hume, Gibbon, Cowper, Gray, Walpole, Bolingbroke,

disabilities attached to it. And exactly in keeping with this outward demonstration of weakness, is his inability to mature a healthful quality of semen. Of necessity, therefore, when taking precedence of the female in copulation, will his huge, spare, and ill-governed form be communicated to the offspring. In the event of his deferring to the female, an inheritance of his disposition, in some wise, will be likely to reproduce his figure in the next generation, as is continually being witnessed amongst ourselves. A child, answering almost exclusively to the personal character of one parent, marries; and the latent spirit of the unseen parent claims a restoration of his features in the grandchild. *There are few exceptions to the rule which forbids the employment of very large males.*

Whilst entertaining this question, it deserves to be considered how far relative disproportion of one sex to another, can be adopted with safety or advantage to the breeder. It so happens that established authorities are directly at variance on the point. Mr. Cline, whether dealing with a perpetuation of the species, by crossing one

Addison, Johnson, Burke, and Davy, were all childless: few of them married. The grand-daughters of Shakspeare and Milton were the last of their respective line; and Sir Walter Scott, though he left four children, is now nearly unrepresented in blood.

variety with another, or by the more general custom of pairing animals of a like variety, maintains that success, in an eminent degree, has only occurred "in those instances in which the females were larger than in the usual proportion of females to males;" and hence urges a regard to that principle, as the most secure basis on which the operations of the breeder can be conducted. The reason he assigns in support of the practice is, "that the size of the foetus is generally in proportion to that of the male parent; and therefore, when the female parent is disproportionately small" (that is, when she holds the common relation to the male, in size, which we observe in Nature) "the quantity of nourishment is deficient, and her offspring has all the disproportions of a starveling." Admitting, for a moment, the correctness of Mr. Cline's opinion, "that the size of the foetus is generally in proportion to that of the male parent," it follows that its ultimate bulk must be regulated by the same law. If, then, we try to reverse the common order of things, and start with an unusually large cow, and a smart little bull, the produce, according to his showing, though well nourished throughout the period of utero-gestation, will be limited in size at birth, and in its ultimate growth, by the influence of the

sire. Supposing such produce to be a cow calf, we may presume that it will not attain to *his* size, and that, therefore, it will be somewhat less than the female parent. To carry out Mr. Cline's principle, *she* should be put to a bull *still smaller* than her sire ; and thus we shall have a gradual declension in bulk, till, in a few generations, what might originally have been the largest variety of its species, will be scarcely seen to rival even sheep and pigs.

Earl Spencer, after dwelling on the qualifications essential to the constitution of the best class of males, adverts to the doctrine maintained by Mr. Cline, from which, however, he dissents, and for reasons which experience of no ordinary kind enables him to give. His lordship prefers to breed from large females ; but observes that, if he do breed from one which he thinks too small, he puts to her the largest male of good shape that he possesses. And in proof of the success resulting from such practice, he adduces an instance of a Smithfield prize ox, derived from his largest bull, in conjunction with a cow, so small, that he culled her after having bred that one calf. " My opinion, then," concludes his lordship, " the result of my own practical experience, is, that if a man considers the female animals which he

possesses to be smaller than he wishes, he may safely put them to a male of large size, provided he is well-bred, of good quality, and well-shaped." Now if these two authorities are to be received in a sense precisely comporting with the language employed by them, it is obvious that *one of them* is in error. Whilst as yet the subject of breeding had been little benefited by the contributions of science, it was customary to include, amongst animals of a *large and good class*, those whose length and height greatly exceed the requirements of width; and to account but small others which should comprise the same bulk, under a different mode of arrangement. Even now, with many, does Virgil's authority, in so far, obtain :

Tum longo nullus lateri modus ;

and had Mr. Cline's views on the relative merits of big and little bulls been less strenuously enforced, I should have thought that by the *latter* was intended to be understood compact males—*big ones in little room*. But the pertinacity with which he adheres to his fanciful dogma, will justify no other conclusion than that he adopted little males *in principle*. His theory had reference, unquestionably, to the ease with which they may be preserved in rude health: yet the argu-

ment by which we thus establish the preference due to them, in a procreative sense, over those of a larger class, where food is scarce or of mean quality, tends with equal force to prove that a *little cow*, of good figure and constitution, may provide abundant nourishment, throughout the term of utero-gestation, for a calf, begotten of a large bull. It tends, also, further to prove the unsuitableness of little animals, in general, to land of better quality than is required to keep them in good store condition, whilst engaged in the capacity of breeding. For if, under the disadvantages attachable to scantiness of fare, they can maintain themselves in health, they must, of necessity, grow fat, when more liberally treated. Knowing this full well, I am at a loss to conceive why Mr. Cline should have insisted on the *unconditional employment of little males*. His zeal in the discountenance of extravagantly large ones, must have led him into an opposite error.

Est modus in rebus ; sunt certi denique fines,
Quos ultra, citraque nequit consistere rectum.

It is too much to say that “the size of the foetus is generally in proportion to that of the male parent.” Its figure may be that of the male, or female parent, or of both, as they shall happen

to have been affected towards each other in the reproductive passion : but the task of conducting the maintenance of the foetus, *in utero*, being exclusively that of the female, to her it must stand indebted for the progress it shall make whilst entrusted to her guardianship. And so far from the power of the female to supply her off-spring with nourishment being in proportion to her size, and to the power of nourishing herself from the excellence of her constitution, as taught by Mr. Cline, the reverse of this order of things, most commonly, obtains. The high-conditioned short-horn cow does not produce so heavy a calf, at birth, as the light-fleshed milking beast, whatever may be the character of the bull to which they shall respectively be put. The size of the new-born Alderney calf, again, is often truly astonishing, when viewed in relation to the insignificant source whence it has proceeded ; and infants born of spare, but active, mothers far outweigh the chief of those which lie concealed, throughout the foetal term, in misappropriate stores of flesh and fat. Results thus differing from those which an *a priori* argument might anticipate, are attributable to a law in the animal economy, which holds the constitution, when absorbed in its own nurture, comparatively irresponsible to other claims. To

such influence may be ascribed the characteristic selfishness of males ; for in proportion as they lustier grow than those whom they caress, do they revere themselves ; and only, when o'erflowing with desire, betray the tender passion. So females, too, of masculine exterior, indulge but little sympathy with males. Their swelling forms engross their whole concern ; and if they procreate, it is from sensuality alone. Hence do they claim the right to mould the embryo as they will ; and having “formed and fashioned” it, in strict compliance with this law, they dole out nutriment so tardily, that when gestation ends, the fœtus seems to have been abortively thrown off.

A recognition of this law is essential to a correct estimate of the operations of Nature ; for only by reference to its authority can we reconcile the incompatibility of conflicting interests. The human female, whilst suckling, ceases to menstruate—the inferior animal, commonly, to entertain the male : and both, when loaded with condition, fail in the secretion of milk. With little trouble might I greatly swell the list of parallel instances, to prove that, in conformity with this principle, devotedness to one particular function, of necessity, involves the prejudice of others.

A practical adoption of Mr. Cline's scheme is most properly observed when a farmer is removing from good to worse land. If he apply not himself to a reduction of the size of his cattle, under such circumstances, agreeably to the dictates of science, Nature will effect the change for him, in a manner less suited to his interest. Left wholly to her charge, the morbid laxity induced by insufficient nutriment, disqualifies the system for elaborating as before, the foetal rudiments. Strong branches grow not on distempered trunks: and those which now spring from the suffering herd, will represent their weakness in themselves. This, however, may be obviated by the timely introduction of a little bull. But not more advantageous is it to prefer him here, than to exchange him for a larger, if once more proceeding from a mean to better land. He who should take a hardy little race, adapted best to poor and hilly districts, down to creditable pasturage like that at Wiseton, would soon find their carcasses augment beyond his wish. But not to dwell on *that* objection, it deserves to be considered that, for other reasons, are they out of place, where those of larger frame, and no less estimable quality will flourish. On every hand it is agreed that *big good* animals are more desirable than *small and*

good ; and since no further trouble is incurred in rearing great than small, the practice recommended by Earl Spencer, to conjoin with little cows, if such there be, a large and well-bred bull, is perfectly consistent with the rule I would suggest. No matter which their offspring may resemble : each being good, must surely good engender. And should it happen that they blend harmoniously in love, still no less worthy such embrace will be their offspring found.

A few words by way of induction, and I have done. To enter on a lengthened inquiry into the theory of generation would, I fear, be to perplex the reader with a multiplicity of conflicting statements and opinions from which little profit could be derived. The subject is confessedly one of the most intricate within the range of physiology ; and I would not formally introduce it, but for the sake of rendering more intelligible some of the principles which I have already been attempting to establish. Long as the work of reproduction has been maintained amongst mankind, it has not until lately been determined to the satisfaction of those whom it most concerns, whether it be essential to impregnation, that the semen of the male and the rudiments of the female, be brought into actual contact. Many

distinguished authorities have contended, because they could not discover semen in the cavity of the womb immediately after copulation, that it never enters that organ, and that conception must, therefore, be the result of a seminal aura or breath; whilst others of no less reputation have declared that they could not only detect semen within the womb, but along the Fallopian tubes, which furnish a communication between the upper and lateral part of the womb, on either side, and the ovaries, from which the foetal germ is eliminated. Hence have they insisted on the indispensableness of an admixture of the generative secretions to ensure conception. Not unfrequently, however, have the converts to this doctrine doubted its correctness. The rigid contraction of the uterine aperture in the unimpregnated state, and the difficulty of proving it to be otherwise at the moment of seminal emission, together with the many well-attested instances of impregnation having occurred, where the male fluid has been *supposed* to have passed no farther than the vulva, are circumstances that have contributed in no small degree to disturb their confidence. Thus hesitating to adopt even their own hypothesis unreservedly, they have tintured, in like manner, subsidiary streams of information; and those

whom we have been taught to regard as creditable authorities, are observed, on one page, to insist on the necessity of a close embrace of the sexes, and on another to dilate upon the superfluousness of the practice. It is hardly too much to say that neither ancient nor modern literature embodies a finer contribution to physiology than do the verses in which Virgil expresses his reasons for enjoining a spare diet and full work in the case of mares that are destined for breeding :

Hoc faciunt nimio ne luxu obtusior usus
 Sit genitali arvo, et sulcos oblimet inertes :
 Sed rapiat sitiens Venerem, interiúsque recondat.

Georg. iii. 135.

Lest genital inaptitude o'erpower
 The native wish,—and mock the fruitless hour :
 By art, induce them gladly to embrace
 The pleasing earnest of a future race.*

Yet soon are we diverted from this maxim by a grave assurance, that so susceptible are mares of venereal excitement, as to have been known to conceive without intercourse with the other sex—an assertion which he qualifies, I admit, by limiting the outrage to one of false conception ; and it is not difficult to discover that what he

* I am compelled to beg the reader's acceptance of this rendering. Sotheby has evidently declined to give the sense of the author, and Dryden is extravagantly verbose and obscene.

intended to be construed as such, was nothing more than the mucus which occasionally escapes from mares, during the prevalence of extreme generative ardour,* Nevertheless the entire passage went forth, subject to whatever application individual caprice or ingenuity might devise : and too soon was it observable that the luxuriations of poetry had been confined not to the legitimate muse ; for Columella † and Varro, ‡ advancing on the authority of Virgil, boldly declared that, in Spain, mares had frequently been known to conceive and rear an offspring without masculine agency, but which were usually short-lived. Pliny too, with proverbial credulity, says it happens in Lusitania, near the city of Lisbon and the river Tagus, that mares, facing the west wind, conceive and bring forth a living animal, of remarkable fleetness ; but which survives not the third year. § Fanciful as may appear to have been the speculations of these writers, they can scarcely be said to exceed those which, under the speciousness of science, have been promulgated in comparatively modern times. Our illustrious country-

* *Georg.* iii. 269. † *Lib.* vi. ca. 27. ‡ *Lib.* ii. 1.

§ *Constat in Lusitania circa Olisiponem oppidum et Tagum amnem equas Favonio flante observas animale concipere spiritum, idque partum fieri, et gigni perniciosissimum ita : sed triennium vitæ non excedere. Lib. viii. 47.*

man, Harvey, contended that the foetus was constituted of the female rudiments alone—a dogma warmly supported, as well, by Swammerdam; whilst Leeuwenhoeck, Hartsocher, and others, took up an opposite position, and argued that it was derived entirely from the male.

But I am already wandering from the path I had set out for myself; and will, therefore, retrace my steps in search of more available information. Dr. Blundell, a man whose genius and professional occupation admirably adapted him to the inquiry, instituted a series of experiments some years ago, with a view to decide the long agitated question, whether conception could occur, without an immediate contact of the male semen with the female rudiments. Rabbits were selected for the purpose of demonstration, on account of the disposition and capaciousness of their genital organs. The vagina of the doe, it should be premised, when full grown, is about three inches long. The wombs, in common with those of most omniparous animals, are two tubular organs of about the same length, when unimpregnated, and which communicate with the vagina by two distinct orifices, so completely independent of each other, that one may be removed with little or no injury to its fellow. The first set of experiments

consisted in opening the bellies of several does, and dividing, transversely, one of the wombs, in each animal, at its juncture with the vagina. Notwithstanding the violence necessarily inflicted, most of them recovered, and eventually took the buck: but the lower or vaginal extremity of the severed wombs so effectually closed, as to forbid all seminal ingress. At different periods of uterogestation, the animals were destroyed, when they were found to have conceived on the uninterrupted, but not on the opposite, side. He next cut off the communication of both wombs with the vagina, by dividing the latter so high as to admit of subsequent intercourse with the male. All those which survived the operation, retained their sexual appetency, and were repeatedly put to the buck: yet none of them conceived. In both series of experiments, the ovaries, on either side, were highly excited by coition, as were also the Fallopian tubes. Graafian vesicles, as they are termed, were matured—their contents escaped—and evidence of the fact, in the establishment of little yellow bodies (*corpora lutea*), was distinctly traceable. The consequence of this descent of the female rudiments through the Fallopian tubes, into such of the wombs as were inaccessible to the semen, was an accumulation

of fluid in them, proportioned to the vehemence of feminine desire, and the gratification afforded by interviews with the male. These circumstances were considered by Dr. Blundell, as indeed they deserved to be, in the light of abortive efforts of generation. To satisfy himself and others that the animals were not incapacitated for breeding by local violence and debility, consequent on the operations to which they were submitted, the doctor divided the vagina of two young does, and left the parts in apposition, that reunion might occur. This was soon effected, and, on being put to the male, they were both impregnated. He then, in several instances, operated on the wombs themselves, by making two, and sometimes three, transverse cuts nearly through, leaving only so much of their substance entire as to afford a reasonable hope of an adherence of the contiguous edges. Many subjects of this experiment died; but “the very first doe which recovered, produced no less than nine fœtuses from her *first* intercourse with the male. Indeed so complete was the action of the *uterus*, that there was not one of the little masses of rudimental matter which it failed to mature; and it was found, on a careful comparison of the wombs with the ovaries, that the number of

foetuses and corporea lutea was the same." These experiments are valuable, inasmuch as they prove, by direct and irrefragable evidence, that a mixture of the male semen and female rudiments is indispensable to impregnation:

Semper enim partus duplici de semine constat.

"For both must join, or nought can e'er ensue."

Such was the doctrine maintained by Epicurus and his followers; and it is not a little humiliating to find, after all the labour that has been devoted to the cultivation of this department, that we are scarcely in advance of the philosophy of generation, as taught in the "school of the garden" two thousand years ago.

Admitting the fact involved in Dr. Blundell's experiments to have been satisfactorily established, it becomes a question of no inconsiderable interest, by what means the semen arrives at its destination. That under circumstances most favourable to its transmission, it is somewhat sparingly entertained by the womb, few will pretend to deny. Nor is it necessary to prove more than that, however limited the supply, it *does* reach the womb; since it has long been agreed amongst physiologists that this fluid, in almost any divisible form, is enough for the accomplishment of its purpose.

Against the argument that, during the height of venereal orgasm, the semen is ejaculated with sufficient force to explain the circumstance, applies this objection—that the relative position of the sexes is not always favourable to its reception ; so that unless we could believe the uterus to be endowed with a larger share of prehension than the most sanguine advocate of its peculiar life (*vita propria*) would feel himself at liberty to avow, it would be difficult, in this stage of the inquiry, to resolve the question. To an inherent property of the vagina itself, analogous to the peristaltic motion of the intestines, must we look for collateral aid—a property greatly concerned, whether in the higher or lower orders of animals, in committing the semen to its impassioned recipient. And it is worthy, also, of remark, that reproductive intercourse, in the human subject (and I am equally certain that a like result occurs in brutes), is always accompanied with more or less feminine prostration, in some instances amounting pretty nearly to syncope. At that moment is it that the uterus imbibes the vital stream.* And since it is

* The effect of general relaxation on the previously rigid uterus is often strikingly exemplified in labour. The stomach, sympathizing with the womb, takes on nausea, and vomiting ensues. This diminishes fibrous irritability, and the “consummation devoutly to be wished” soon arrives. Hence the trite saying that sick labours are safe. Ordinarily they are so.

certain that faintness induces increased activity in the peristaltic motion of the intestines, it is perfectly allowable to suppose that an approximation to that state, in the pleasurable exercise of venery, may encourage the vaginal attribute of which I have spoken, together with that of the uterus itself.

Impressions thus eminently characteristic of the sex, are realized in a degree precisely corresponding to that in which feminine delicacy prevails. A refined sensibility—the usual accompaniment of slenderness and gracefulness of figure, participates most exquisitely in such enjoyment: and these are the subjects who, in the event of their marrying the object of their choice, bear children principally after the image of the sire. The more largely the nervous system is engrossed in the government of animal matter, the less susceptible is the individual of true feminine emotion: hence do those of a portly form care little for sexual commerce. If they possess an exuberance of nervous vigour, still do they not share the kindly feelings that belong to women of a different cast. Their character is then one of masculine enterprise; and but for their mammary development and voice, we should be inclined to think them men. A constitutional rigidity of fibre, of which the uterine system equally partakes, defies

all efforts at impregnation, unless previously subdued by physical labour and a relaxing diet. Then will the womb its pleasing task essay.* And *with such treatment*, I feel bound to confess they are the most valuable of all instruments in the perpetuation of their species. To deny that would be to reject the universal testimony of nature. But let me not here be misunderstood. I am speaking of robust, muscular, females that enjoy a sufficient amount of nervous power to keep themselves in good health and spirits. I have already shown that they look not on the other sex

* A question here very naturally arises—why females of abandoned character, who answer not, physically, to the class I have been describing, fail to conceive? It is thus to be accounted for; during the early part of their wretched career, they suffer from constant apprehension of the evils resulting from impropriety; the first and chief of which is—impregnation. Fear so fully usurps the seat of that passion which presides under the blissful security of marriage, as to preclude the possibility of conception. By and bye, another train of thought and action is established. She who has anxiously been waiting the fulfilment of some pledge, offered perhaps, impiously in the sight of heaven, as the condition on which her virtue was to be resigned, finds herself betrayed by her associate; and yielding to the incitement of maddening revenge, she plunges into the very sink of pollution. And now no longer cherishing the hope of mutual love, she loathes the form she clasps, and thus sterility preserves. Sometimes it happens that such women terminate a course of profligacy in marriage, and become the parents of families. I recognize them occasionally in my professional rounds; and am convinced that the barrenness of prostitutes is attributable, not so much to physical defect of the ovaries or Fallopian tubes, as to that moral depravity, which is irreconcilable with affection for any individual object.

as do the general class of females—that selfishness incites them to the soft embrace—and that, not only do their offspring, for the most part, inherit *their* constitutional properties, but that the prevailing sex is *their own*. A nicer adaptation of the nervous to the animal system than is observable in males of corresponding character (for it is notorious that females, *cæteris paribus*, preserve greater temperateness of feeling and action than do those of the opposite sex), would seem to fit them most admirably for purposes of procreation, when they can be made available. My memory serves me with many instances that might be quoted by way of illustration, if the usages of society would admit of their introduction. One I *will* give from the history of my own family. My great-grandmother, in the line of my father, was a woman of this class, inheriting a huge and beautiful frame, with a proportionable amount of vital energy. Few men equalled her in physical strength; and tradition affirms that, when once insulted by the way, she seized the offender, and carrying him to a neighbouring river, threw him headlong in, at the imminent peril of his life. Her husband was an active man, but by no means comparable with her in natural endowments. Their sons partook of the mother's

habit; and being derived from an indigent source, it was their lot to be employed as agricultural labourers. In this vocation they toiled industriously, lived contentedly, ate the "bread of carefulness," and died in a good old age—one, from whom I have the honour to have descended, numbering seventy, another ninety-four, and the last ninety-seven years. The succeeding generation was, perhaps, equally distinguished for native vigour; but one member appropriating his faculties to intellectual pursuits, ascended into a higher sphere of duty. His children may be said, with few exceptions, to maintain the nervous character of their ancestors,—some excelling in rude strength—others in mental exercises. And though the writer of this article has no pretensions to rank with either division, he can boast of a brother who, without any scholastic advantages beyond those in common, acquired a reputation at the University of Edinburgh, which has no parallel in the medical history of that institution. He obtained the first presidency, as it is termed, of every distinguished society accessible to students,—wrote *nine prize essays* on literary and scientific subjects (most of them involving original discoveries in physiology), and when receiving the University gold medal, on his graduation, at

the hands of the "Principal," was told that his *thesis* was considered by the Senate to be "not only superior to any given in that season, but to any ever presented to the faculty." Thus do we see the physical advantages attachable to this form of parentage, and the applicability of those who share in it, even to exalted purposes, under suitable culture. Our legislative assemblies are not without examples of a like kind, in the persons of some prominent members.

Amongst breeders it is a subject of much complaint, that good as the generality of their cow calves are, there rarely appears a first-rate bull. To obtain such, reference must be made to the nervous and muscular female—the acknowledged leader of the herd, or one after her disposition. If dependence be placed on a mild, benignant, dam, disappointment will most likely ensue. She seldom breeds a valuable bull: the former seldom fails. The mother of "Clarion," both of whose portraits are given in the treatise, published under the superintendence of the Society for the Diffusion of Useful Knowledge, appeared to me, by the loftiness of her bearing, as she walked along, on my visit to Wiseton in the autumn of 1835, to be a beast of the class to which I now allude. And if my recollection serve me, she was the parent

of "William" or "Wiseton," bulls that were held, at that time, in high esteem by Earl Spencer. Mr. Wilkinson's late Hebe was a cow of this description; and whilst in his possession, she bred two excellent bulls. And an animal he bought out of Durham some years ago (Will Honeycomb), which I believe to be the best I have ever seen of any variety, is indebted for his distinction to a dam of similar character. Virgil, therefore, though somewhat unfortunate in detail, was correct in principle, when advising a selection of masculine females, as security for a vigorous offspring. The original passage, for its classical beauty, together with the spirited translation of Sotheby, I will subjoin:

Seu quis, Olimpiacæ miratus præmia palmæ,
 Pascit equos, seu quis fortes ad aratra juvencos;
 Corpora præcipuè matrum legat. Optima torvæ
 Forma bovis, cui turpe caput, eui plurima cervix,
 Et erurum tenuis à mento palearia pendent.
 Tum longo nullus lateri modus: omnia magna:
 Pes etiam, et eamuris hirtæ sub cornibus aures.
 Nee mihi displiceat maculis insignis et albo:
 Aut juga detrectans, interdumque aspera cornu,
 Et faciem tauro proprior: quæque ardua tota,
 Et gradiens imâ verrit vestigia caudâ.

Georg. iii. 49.

Who for th' Olympian palm the courser rears,
 Or breeds, to bear the yoke, resistless steers,
 With prescient care the destined mother trace,
 And formed like her expect the promised race.

If her large front and neck vast strength denote ;
If on her knee the pendulous dewlap float ;
If curling horns their crescent inward bend,
And bristly hairs beneath the ear defend ;
If lengthening flanks to boundless measure spread ;
If broad her foot, and bold her bull-like head ;
If snowy spots her mottled body stain,
And her indignant brow the yoke disdain,
With tail wide sweeping, as she stalks, the dew ;
Thus, lofty, large, and long, the mother choose.

Resuming the more immediate subject of generation, it remains for me now, in as popular a form as delicacy will permit, to contemplate the progressive evolution of the fœtus. In the absence of precise information on this head, we should be at no loss to conceive the probability that, with products designed by Nature to constitute the basis of animal developement, there would be identified a considerable degree of vitality. Both the semen and female rudiments have been presumed to abound with organic molecules ; and microscopical research having confirmed the propriety of such belief in respect of the former, there can be little reason to doubt (since the ovaries, from which the female rudiments proceed, hold the same relation to the female as do the testicles to the opposite sex) that a like vital property belongs also to the latter. To ordinary observation, neither of them affords any indication of the pre-

sence of animal life : but at an early period of utero-gestation, it is found that what had previously existed in the form of insensate matter has undergone a very sensible change. A rudimental heart, incited to action by inherent irritability, is now discoverable ; and scarcely has pulsation commenced before the stimulus, by which it is maintained, finds a repertory in the growth of the brain and spinal cord. The most essential process in the animal economy—that of circulation, having been thus instituted, fresh accessions of matter soon follow, first in the neighbourhood of the heart, and radiating thence, as it were, to the extremities. For the trunk, it is to be remembered, acquires a somewhat definite character, before the limbs, which pullulate from it like radicles from the parent seed, begin to appear. These operations proceed with a rapidity proportioned to the length of time occupied in the entire work of utero-gestation, and are, therefore, longer delayed in the human subject than in most inferior animals. But it never can be too strongly impressed on the minds of those who take an interest in the breeding of cattle, that the growth of parts most remote from the parent organ (the heart) is conducted with freedom, in the inverse ratio to the bulk of the animal base. So that

if the germ be large, as where reproduction occurs between a pair, one of which, at least, is of full habit (in conformity with a law already explained, and whose dominion involves even the nascent embryo), the formative efforts of Nature are too intently occupied, in the first instance, to be easily diverted by consecutive claims. Hence are the extremities of large bodied animals shorter than those of a slender figure, and *vice versa*. This must have been Mr. Cline's view when contending that, by his method of crossing a large female with a small male, "the lungs and heart become proportionately larger, in consequence of a peculiarity in the circulation of the fœtus, which causes a larger proportion of the blood, under such circumstances, to be distributed to the lungs than to the other parts of the body ; and as the shape and size of the chest depend upon that of the lungs, hence arises the remarkably large chest which is produced," &c.

According to Lucretius, it would seem that some of the principles illustrated in the preceding pages constituted part of the Epicurean system of philosophy. The chief of them will be found in a passage which I will here transcribe, for the sake of showing in what respect such doctrine differs from my own :

Et cœmiscendo quom semine forte virili
 Femina vim vicit subitâ vi, couripuitque ;
 Tum similes matrum materno semine fiunt :
 Ut patribus patrio : sed, quos utriusque figuræ
 Esse vides juxtim, miscenteis volta parentum,
 Corpore de patrio ac materno sanguine crescunt,
 Semina quom, Veneris stimulis excita per artus,
 Obvia confligit conspirans mutuus ardor ;
 Et neque utrum superavit eorum, nec superatum est.

Fit quoque, ut interdum similes existere avorum
 Possint, et referant proavorum sæpe figuras ;
 Propterea, quia multa modis primordia multis
 Mixta suo eclant in corpore sæpe parentes,
 Quæ patribus patres tradunt a stirpe profecta.
 Inde Venus variâ producit sorte figuras ;
 Majorumque refert voltus, vocesque, comasque :
 Quandoquidem nihilo minus hæc de semine certo
 Fiunt, quam facies, et corpora, membraque, nobis.
 Et mulicbre oritur patrio de semine seclum ;
 Maternoque mares existunt corpore cretei.
 Semper enim partus duplici de semine constat :
 Atque utri simile est magis id, quodquomque creatur,
 Ejus habet plus parte æquâ, quod cernere possis,
 Sive virûm suboles, sive est muliebris origo.

De Rer. Nat. iv. 1202.

If, when the male his genial tide protrudes,
 The panting female deep her breath retract,
 Transported most, the race produced will, then,
 From female stores prove female, if reversed,
 From stores paternal, male. But when the form
 Blends both its parents' features, it ascends
 From equal powers of each ; the warm embrace
 Rousing alike, through each conflicting frame,
 The seeds of latent life, in scale, so nice,
 That neither conquers, nor to conquest yields.

Oft view we, too, the living lines portrayed
 Of ancestors remote ; for various seeds,

Commingled various, through the parent frame
 Lurk, which from race to race preserve entire
 The form, the features of th' anterior stock.
 Diversely such the power creative blends ;
 Whence oft the voice revives, the hair, the hue,
 The full complexion of the race deceased :
 For these as sure from seeds defined ascend
 As e'en the face, the body, or the limbs.
 Then, too, though male the fœtus, female stores
 Aid the production ; while, if female formed,
 The tide paternal mixes in the make ;
 For both must join, or nought can e'er ensue.
 But obvious this, that where the semblance more
 Inclines to either, the prevailing sex
 Chief lent the seeds of life, and reared complete
 The virgin embryo, or incipient man. GOOD.

Unfortunately, one fundamental error—that of failing to recognize the difference between absolute and relative pleasure, pervades this system. If, in reproductive intercourse, says Lucretius, the female be

Transported most, the race produced will, then,
 From female stores prove female, if reversed,
 From stores paternal, male.

Now it cannot, for a moment, be doubted, that a preponderance of bliss is the inheritance of those individuals who, whether male or female, possess the greatest share of sensibility. And yet *they* are seldom *personally* represented in the next succeeding generation. In character and constitutional predisposition, they are intimately iden-

tified with their offspring ; but not commonly in physical arrangement, except in so far as some local resemblance, of comparative unimportance, is concerned. Having naturally a high tone of moral feeling, they are rarely induced to marry other than those whom they tenderly regard. And then the most exquisite delight is their's—not simply because they are exalted to a participation in pleasures which the law of celibacy had, till now, proscribed ; but because their enjoyment involves the embrace of objects whom they cherish beyond every earthly consideration besides. That which affords them inexpressible felicity, under these circumstances, would be a source of insurmountable grief, if conducted with any but their chosen lovers ; in evidence of which, we have the affecting story of Lucretia, kinswoman of the Roman poet and philosopher, before us. Yet do I repeat that, notwithstanding the rapture implied in such devotedness, people of this class are seldom recognized in the persons of their children. Various are the suggestions that arise, in attempting an immediate explanation of the fact. We may suppose that, as sensibility tends to impair nervous efficiency, precedence (in a work confessedly requiring an exercise of vital energy) naturally and necessarily devolves on the party

whom it shall least incapacitate. But this is to admit that the ruling parent is, in a general sense, the more hardy and efficient instrument of the two; whilst observation tells us that many a seeming nerveless woman, whose form consumes so fast the feeble life allotted her, that not a thought has she, save how she best may gratify her soul, conceives a numerous family in her own likeness, and that too, when justly charging their paternity on one of incomparably greater vigour. So oft, again, conjoined with sprightly women, are men of dull and churlish disposition seen, whom love can scarcely rouse to *charitable intercourse*; and yet whose children, "true to Nature's die," their veritable form and features blend. Another theory, and one more reconcilable with truth, is to maintain that love, which, in its purest form, subdues whatever heart it reaches, binds its votary to defer, no less in *reproductive*, than in *social*, intercourse; and that as, obviously, in outward things, the purport of such deference is to assign dominion to another, so in the subtler exercise of love, a corresponding tendency prevails. Whatever may be the rationale adopted, of this I am convinced, that in proportion to the intensity of regard entertained by a woman for her husband, is the prevalence of his likeness in the

offspring—unless he happen to requite her love by an equal amount of tenderness. Then do their children happily combine the physical characteristics of them both: and what is of infinitely greater moment, as well in reference to time as to eternity, they constitute, in a moral sense, the best of all that is human. I have known people, in *some* instances, to marry, where the only incentive to union has obviously been a mutual attachment.* A few of the parties have had but crude ideas of the Christian dispensation: yet in every case where impregnation has followed, have their children been distinguished for their virtues. Would that all who plead a special interest in Christianity were actuated by motives equally creditable;—we should not so commonly as now be heard to exclaim, on observing the outrages committed by the descendants of avowedly religious parents, how strange! that they who have had continually before them a good example, in the persons of both father and

* Let me not here be supposed to include all the poor senseless, dissipated, beings who may be thought, by careless observers, to marry from virtuous motives, because the imputation of avarice cannot apply to them. The inducements to marriage are probably as various as the modifications of which our passions are susceptible; and there is too much reason to fear that, if the secrets of all hearts could be explored, a very inconsiderable portion of the community, in any grade of life, would be found to engage in this “holy estate” from *pure* and *reciprocal* affection.

mother, should be found thus insensible to the requirements of morality; whilst the children of those, again, who have scarcely seemed to recognize the doctrine of future rewards and punishments, should occasionally be seen to adorn whatever rank they move in.

If, for the sake of additional argument, we pursue the history of a highly sensitive female, through a long series of unrelenting abuse, incurred not unfrequently in marriage, until the source whence it proceeds is looked upon with comparative indifference; or mark the widow of a man who, even in death, retains her heart in thralldom, affianced, from motives of expediency, to another, we shall find that, though participating but faintly in joys that once enraptured her, the children she may now conceive will be more immediately identified with her in person, than those she previously had borne. Hence do I maintain that it is only by reference to the generative passion, in a *relative sense*, that we can predetermine the physical and moral qualifications of the issue of any pair. Does pure and *unrequited* love incline the heart of one towards another? Then will the personal character of the latter be discoverable in their children, with just so much of human sympathy as shall have been engendered by the affec-

tionate disposition of the former. Do they regard each other with *mutual* tenderness? Then will the physical and moral attributes of *both* be shared in the constitution of all that humanity can desire. Are they led by *animal instinct alone* to propagate their kind? Again is the form and figure of each parent viewed in the rising stock: but, in a moral sense, I hold that they who are thus conceived, stand little better than as anti-types of hell! I will not deny the power of the gospel to redeem them: nevertheless do I believe that, as ordinarily administered, it seldom does. Having no greater amount of sensibility than the beast that perishes, they are, for the most part, inaccessible to its influence. No blush extends its mantling grace to them,—no tear illumines the portals of the soul,—the smile of infancy, the pride of youth, the joylessness of age, educe no sympathies,—alike despised and dreaded do they live, and steeped in self-creating agony they die.

Qualified in a sense which the preceding reflections suggest, the doctrine of Lucretius is reconcilable with that which multiplied observation has led me to entertain. If it be insisted that, when the female is “transported most,” by virtue of her greater regard for the object of her embrace than is conceived by him for her, “the race produced

will, then, from female stores, prove female ;” or, taking up another and yet more defensible position of the author, inasmuch as it contends not, necessarily, for a reproduction of the sex, along with that of like form and features—I would say, if it be insisted that, when the female is “transported most,” by reason of her greater affection for the opposite party than is shared by her in return, the physical character of the offspring is, for the most part, that of the mother, the argument is negatived by induction, whether in reference to man or brute. But if it be alleged that, when the female participates most in *abstract* pleasure, the product resembles her,—and *vice versa*, the theory comports with the universal testimony of nature : and in *that sense* I heartily concur with Lucretius in his summary of the Epicurean doctrine.





